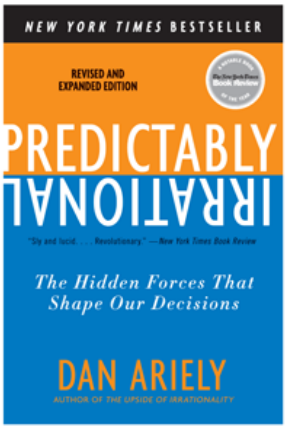
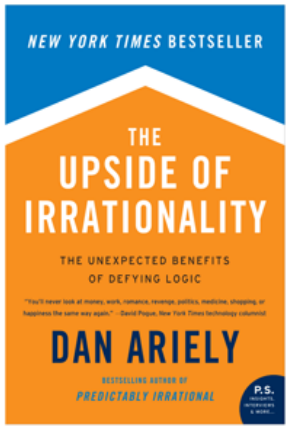
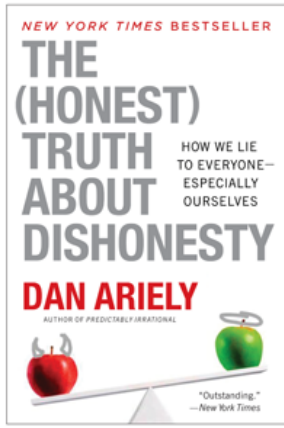
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The Hidden Forces That Shape Our Decisions

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Predictably Irrational

Revised
and Expanded
Edition

The Hidden Forces
That Shape Our Decisions

Dan Ariely



HARPER
PERENNIAL

Dedication

To my mentors, colleagues, and students—
who make research exciting

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PRAISE FOR PREDICTABLY IRRATIONAL

Introduction

How an Injury Led Me to Irrationality and to the Research Described Here

I have been told by many people that I have an unusual way of looking at the world. Over the last 20 years or so of my research career, it's enabled me to have a lot of fun figuring out what really influences our decisions in daily life (as opposed to what we think, often with great confidence, influences them).

Do you know why we so often promise ourselves to diet, only to have the thought vanish when the dessert cart rolls by?

Do you know why we sometimes find ourselves excitedly buying things we don't really need?

Do you know why we still have a headache after taking a one-cent aspirin, but why that same headache vanishes when the aspirin costs 50 cents?

Do you know why people who have been asked to recall the Ten Commandments tend to be more honest (at least immediately afterward) than those who haven't? Or why honor codes actually do reduce dishonesty in the workplace?

By the end of this book, you'll know the answers to these and many other questions that have implications for your personal life, for your business life, and for the way you look at the world. Understanding the answer to the question about aspirin, for example, has implications not only for your choice of drugs, but for one of the biggest issues facing our society: the cost and effectiveness of health insurance. Understanding the impact of the Ten Commandments in curbing dishonesty might help prevent the next Enron-like fraud. And understanding the dynamics of impulsive eating has implications for every other impulsive decision in our lives—including why it's so hard to save money for a rainy day.

My goal, by the end of this book, is to help you fundamentally rethink what makes you and the people around you tick. I hope to lead you there by presenting a wide range of scientific experiments, findings, and anecdotes that are in many cases quite amusing. Once you see how systematic certain mistakes are—how we repeat them again and again—I think you will begin to learn how to avoid some of them.

But before I tell you about my curious, practical, entertaining (and in some cases even delicious) research on eating, shopping, love, money, procrastination, beer, honesty, and other areas of life, I feel it is important that I tell you about the origins of my somewhat unorthodox worldview—and therefore of this book. Tragically, my introduction to this arena started with an accident many years ago that was anything but amusing.

ON WHAT WOULD otherwise have been a normal Friday afternoon in the life of an eighteen-year-old Israeli, everything changed irreversibly in a matter of a few seconds. An explosion of a large magnesium flare, the kind used to illuminate battlefields at night, left 70 percent of my body covered with third-degree burns.

The next three years found me wrapped in bandages in a hospital and then emerging into public only occasionally, dressed in a tight synthetic suit and mask that made me look like a crooked version of Spider-Man. Without the ability to participate in the same daily activities as my friends and family, I felt partially separated from society and as a consequence started to observe the very activities that were once my daily routine as if I were an outsider. As if I had come from a different culture (or planet), I started reflecting on the goals of different behaviors, mine and those of others. For example, I started wondering why I loved one girl but not another, why my daily routine was designed to be comfortable for the physicians but not for me, why I loved going rock climbing but not studying history, why I cared so much about what other people thought of me, and mostly what it is about life that motivates people and causes us to behave as we do.

During the years in the hospital following my accident, I had extensive experience with different types of pain and a great deal of time between treatments and operations to reflect on it. Initially, my daily agony was largely played out in the "bath," a procedure in which I was soaked in disinfectant solution, the bandages were removed, and the dead particles of skin were scraped off. When the skin is intact, disinfectants create a low-level sting, and in general the bandages come off easily. But when there is little or no skin—as in my case because of my extensive burns—the disinfectant stings unbearably, the bandages stick to the flesh, and removing them (often tearing them) hurts like nothing else I can describe.

Early on in the burn department I started talking to the nurses who administered my daily bath, in order to understand their approach to my treatment. The nurses would routinely grab hold of a bandage and rip it off as fast as possible, creating a relatively short burst of pain; they would repeat this process for an hour or so until they had removed every one of the bandages. Once this process was over I was covered with ointment and with new bandages, in order to repeat the process again the next day.

The nurses, I quickly learned, had theorized that a vigorous tug at the bandages, which caused a sharp spike of pain, was preferable (to the patient) to a slow pulling of the wrappings, which might not lead to such a severe spike of pain but would extend the treatment, and therefore be more painful overall. The nurses had also concluded that there was no difference between two possible methods: starting at the most painful part of the body and working their way to the least painful part; or starting at the least painful part and advancing to the most excruciating areas.

As someone who had actually experienced the pain of the bandage removal process, I did not share their beliefs (which had never been scientifically tested). Moreover, their theories gave no consideration to the amount of fear that the patient felt anticipating the treatment; to the difficulties of dealing with fluctuations of pain over time; to the unpredictability of not knowing when the pain will start and ease off; or to the benefits of being comforted with the possibility that the pain would be reduced over time. But, given my helpless position, I had little influence over the way I was treated.

As soon as I was able to leave the hospital for a prolonged period (I would

still return for occasional operations and treatments for another five years), I began studying at Tel Aviv University. During my first semester, I took a class that profoundly changed my outlook on research and largely determined my future. This was a class on the physiology of the brain, taught by professor Hanan Frenk. In addition to the fascinating material Professor Frenk presented about the workings of the brain, what struck me most about this class was his attitude to questions and alternative theories. Many times, when I raised my hand in class or stopped by his office to suggest a different interpretation of some results he had presented, he replied that my theory was indeed a possibility (somewhat unlikely, but a possibility nevertheless)—and would then challenge me to propose an empirical test to distinguish it from the conventional theory.

Coming up with such tests was not easy, but the idea that science is an empirical endeavor in which all the participants, including a new student like myself, could come up with alternative theories, as long as they found empirical ways to test these theories, opened up a new world to me. On one of my visits to Professor Frenk's office, I proposed a theory explaining how a certain stage of epilepsy developed, and included an idea for how one might test it in rats.

Professor Frenk liked the idea, and for the next three months I operated on about 50 rats, implanting catheters in their spinal cords and giving them different substances to create and reduce their epileptic seizures. One of the practical problems with this approach was that the movements of my hands were very limited, because of my injury, and as a consequence it was very difficult for me to operate on the rats. Luckily for me, my best friend, Ron Weisberg (an avid vegetarian and animal lover), agreed to come with me to the lab for several weekends and help me with the procedures—a true test of friendship if ever there was one.

In the end, it turned out that my theory was wrong, but this did not diminish my enthusiasm. I was able to learn something about my theory, after all, and even though the theory was wrong, it was good to know this with high certainty. I always had many questions about how things work and how people behave, and my new understanding—that science provides the tools and opportunities to examine anything I found interesting—lured me into the study of how people behave.

With these new tools, I focused much of my initial efforts on understanding how we experience pain. For obvious reasons I was most concerned with such situations as the bath treatment, in which pain must be delivered to a patient over a long period of time. Was it possible to reduce the overall agony of such pain? Over the next few years I was able to carry out a set of laboratory experiments on myself, my friends, and volunteers—using physical pain induced by heat, cold water, pressure, loud sounds, and even the psychological pain of losing money in the stock market—to probe for the answers.

By the time I had finished, I realized that the nurses in the burn unit were kind and generous individuals (well, there was one exception) with a lot of experience in soaking and removing bandages, but they still didn't have the right theory about what would minimize their patients' pain. How could they be so wrong, I wondered, considering their vast experience? Since I knew these nurses personally, I knew that their behavior was not due to maliciousness, stupidity, or

neglect. Rather, they were most likely the victims of inherent biases in their perceptions of their patients' pain—biases that apparently were not altered even by their vast experience.

For these reasons, I was particularly excited when I returned to the burn department one morning and presented my results, in the hope of influencing the bandage removal procedures for other patients. It turns out, I told the nurses and physicians, that people feel less pain if treatments (such as removing bandages in a bath) are carried out with lower intensity and longer duration than if the same goal is achieved through high intensity and a shorter duration. In other words, I would have suffered less if they had pulled the bandages off slowly rather than with their quick-pull method.

The nurses were genuinely surprised by my conclusions, but I was equally surprised by what Etty, my favorite nurse, had to say. She admitted that their understanding had been lacking and that they should change their methods. But she also pointed out that a discussion of the pain inflicted in the bath treatment should also take into account the psychological pain that the nurses experienced when their patients screamed in agony. Pulling the bandages quickly might be more understandable, she explained, if it were indeed the nurses' way of shortening their own torment (and their faces often did reveal that they were suffering). In the end, though, we all agreed that the procedures should be changed, and indeed, some of the nurses followed my recommendations.

My recommendations never changed the bandage removal process on a greater scale (as far as I know), but the episode left a special impression on me. If the nurses, with all their experience, misunderstood what constituted reality for the patients they cared so much about, perhaps other people similarly misunderstand the consequences of their behaviors and, for that reason, repeatedly make the wrong decisions. I decided to expand my scope of research, from pain to the examination of cases in which individuals make repeated mistakes—without being able to learn much from their experiences.

THIS JOURNEY INTO the many ways in which we are all irrational, then, is what this book is about. The discipline that allows me to play with this subject matter is called *behavioral economics*, or judgment and decision making (JDM).

Behavioral economics is a relatively new field, one that draws on aspects of both psychology and economics. It has led me to study everything from our reluctance to save for retirement to our inability to think clearly during sexual arousal. It's not just the behavior that I have tried to understand, though, but also the decision-making processes behind such behavior—yours, mine, and everybody else's. Before I go on, let me try to explain, briefly, what behavioral economics is all about and how it is different from standard economics. Let me start out with a bit of Shakespeare:

> *What a piece of work is a man! how noble in reason! how infinite in faculty! in form and moving how express and admirable! in action how like an angel! in apprehension how like a god! The beauty of the world, the paragon of animals.* —*from Act II, scene 2, of Hamlet*

The predominant view of human nature, largely shared by economists, policy

makers, nonprofessionals, and everyday Joes, is the one reflected in this quotation. Of course, this view is largely correct. Our minds and bodies are capable of amazing acts. We can see a ball thrown from a distance, instantly calculate its trajectory and impact, and then move our body and hands in order to catch it. We can learn new languages with ease, particularly as young children. We can master chess. We can recognize thousands of faces without confusing them. We can produce music, literature, technology, and art—and the list goes on and on.

Shakespeare is not alone in his appreciation for the human mind. In fact, we all think of ourselves along the lines of Shakespeare's depiction (although we do realize that our neighbors, spouses, and bosses do not always live up to this standard). Within the domain of science, these assumptions about our ability for perfect reasoning have found their way into economics. In economics, this very basic idea, called *rationality*, provides the foundation for economic theories, predictions, and recommendations.

From this perspective, and to the extent that we all believe in human rationality, we are all economists. I don't mean that each of us can intuitively develop complex game-theoretical models or understand the generalized axiom of revealed preference (GARP); rather, I mean that we hold the basic beliefs about human nature on which economics is built. In this book, when I mention the *rational* economic model, I refer to the basic assumption that most economists and many of us hold about human nature—the simple and compelling idea that we are capable of making the right decisions for ourselves.

Although a feeling of awe at the capability of humans is clearly justified, there is a large difference between a deep sense of admiration and the assumption that our reasoning abilities are perfect. In fact, this book is about human *irrationality*—about our distance from perfection. I believe that recognizing where we depart from the ideal is an important part of the quest to truly understand ourselves, and one that promises many practical benefits. Understanding irrationality is important for our everyday actions and decisions, and for understanding how we design our environment and the choices it presents to us.

My further observation is that we are not only irrational, but *predictably irrational*—that our irrationality happens the same way, again and again. Whether we are acting as consumers, businesspeople, or policy makers, understanding how we are predictably irrational provides a starting point for improving our decision making and changing the way we live for the better.

This leads me to the real "rub" (as Shakespeare might have called it) between conventional economics and behavioral economics. In conventional economics, the assumption that we are all rational implies that, in everyday life, we compute the value of all the options we face and then follow the best possible path of action. What if we make a mistake and do something irrational? Here, too, traditional economics has an answer: "market forces" will sweep down on us and swiftly set us back on the path of righteousness and rationality. On the basis of these assumptions, in fact, generations of economists since Adam Smith have been able to develop far-reaching conclusions about everything from taxation and health-care policies to the pricing of goods and services.

But, as you will see in this book, we are really far less rational than standard

economic theory assumes. Moreover, these irrational behaviors of ours are neither random nor senseless. They are systematic, and since we repeat them again and again, predictable. So, wouldn't it make sense to modify standard economics, to move it away from naive psychology (which often fails the tests of reason, introspection, and—most important—empirical scrutiny)? This is exactly what the emerging field of behavioral economics, and this book as a small part of that enterprise, is trying to accomplish.

AS YOU WILL see in the pages ahead, each of the chapters in this book is based on a few experiments I carried out over the years with some terrific colleagues (at the end of the book, I have included short biographies of my amazing collaborators). Why experiments? Life is complex, with multiple forces simultaneously exerting their influences on us, and this complexity makes it difficult to figure out exactly how each of these forces shapes our behavior. For social scientists, experiments are like microscopes or strobe lights. They help us slow human behavior to a frame-by-frame narration of events, isolate individual forces, and examine those forces carefully and in more detail. They let us test directly and unambiguously what makes us tick.

There is one other point I want to emphasize about experiments. If the lessons learned in any experiment were limited to the exact environment of the experiment, their value would be limited. Instead, I would like you to think about experiments as an illustration of a general principle, providing insight into how we think and how we make decisions—not only in the context of a particular experiment but, by extrapolation, in many contexts of life.

In each chapter, then, I have taken a step in extrapolating the findings from the experiments to other contexts, attempting to describe some of their possible implications for life, business, and public policy. The implications I have drawn are, of course, just a partial list.

To get real value from this, and from social science in general, it is important that you, the reader, spend some time thinking about how the principles of human behavior identified in the experiments apply to your life. My suggestion to you is to pause at the end of each chapter and consider whether the principles revealed in the experiments might make your life better or worse, and more importantly what you could do differently, given your new understanding of human nature. This is where the real adventure lies.

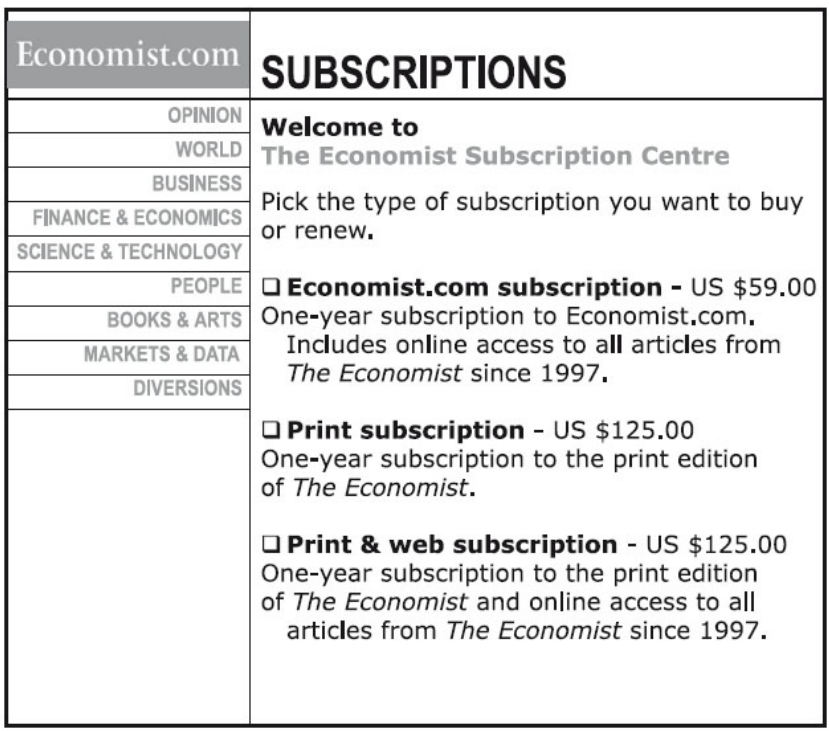
And now for the journey.

CHAPTER 1

The Truth about Relativity

Why Everything Is Relative—Even When It Shouldn't Be

One day while browsing the World Wide Web (obviously for work—not just wasting time), I stumbled on the following ad, on the Web site of a magazine, the *Economist*.


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One-year subscription to the print edition of The Economist.
❑ Print & web subscription - US $125.00
One-year subscription to the print edition of The Economist and online access to all articles from The Economist since 1997.

I read these offers one at a time. The first offer—the Internet subscription for $59—seemed reasonable. The second option—the $125 print subscription—seemed a bit expensive, but still reasonable.

But then I read the third option: a print *and* Internet subscription for $125. I read it twice before my eye ran back to the previous options. Who would want to buy the print option alone, I wondered, when both the Internet and the print subscriptions were offered for the same price? Now, the print-only option may have been a typographical error, but I suspect that the clever people at the

Economist's London offices (and they are clever—and quite mischievous in a British sort of way) were actually manipulating me. I am pretty certain that they wanted me to skip the Internet-only option (which they assumed would be my choice, since I was reading the advertisement on the Web) and jump to the more expensive option: Internet and print.

But how could they manipulate me? I suspect it's because the *Economist*'s marketing wizards (and I could just picture them in their school ties and blazers) knew something important about human behavior: humans rarely choose things in absolute terms. We don't have an internal value meter that tells us how much things are worth. Rather, we focus on the relative advantage of one thing over another, and estimate value accordingly. (For instance, we don't know how much a six-cylinder car is worth, but we can assume it's more expensive than the four-cylinder model.)

In the case of the *Economist*, I may not have known whether the Internet-only subscription at $59 was a better deal than the print-only option at $125. But I certainly knew that the print-and-Internet option for $125 was better than the print-only option at $125. In fact, you could reasonably deduce that in the combination package, the Internet subscription is FREE! "It's a bloody steal—go for it, governor!" I could almost hear them shout from the riverbanks of the Thames. And I have to admit, if I had been inclined to subscribe I probably would have taken the package deal myself. (Later, when I tested the offer on a large number of participants, the vast majority preferred the Internet-and-print deal.)

So what was going on here? Let me start with a fundamental observation: most people don't know what they want unless they see it in context. We don't know what kind of racing bike we want—until we see a champ in the Tour de France ratcheting the gears on a particular model. We don't know what kind of speaker system we like—until we hear a set of speakers that sounds better than the previous one. We don't even know what we want to do with our lives—until we find a relative or a friend who is doing just what we think we should be doing. Everything is relative, and that's the point. Like an airplane pilot landing in the dark, we want runway lights on either side of us, guiding us to the place where we can touch down our wheels.

In the case of the *Economist*, the decision between the Internet-only and print-only options would take a bit of thinking. Thinking is difficult and sometimes unpleasant. So the *Economist*'s marketers offered us a no-brainer: relative to the print-only option, the print-and-Internet option looks clearly superior.

The geniuses at the *Economist* aren't the only ones who understand the importance of relativity. Take Sam, the television salesman. He plays the same general type of trick on us when he decides which televisions to put together on display:

36-inch Panasonic for $690
42-inch Toshiba for $850
50-inch Philips for $1,480

Which one would you choose? In this case, Sam knows that customers find it difficult to compute the value of different options. (Who really knows if the Panasonic at $690 is a better deal than the Philips at $1,480?) But Sam also

knows that given three choices, most people will take the middle choice (as in landing your plane between the runway lights). So guess which television Sam prices as the middle option? That's right—the one he wants to sell!

Of course, Sam is not alone in his cleverness. The *New York Times* ran a story recently about Gregg Rapp, a restaurant consultant, who gets paid to work out the pricing for menus. He knows, for instance, how lamb sold this year as opposed to last year; whether lamb did better paired with squash or with risotto; and whether orders decreased when the price of the main course was hiked from $39 to $41.

One thing Rapp has learned is that high-priced entrées on the menu boost revenue for the restaurant—even if no one buys them. Why? Because even though people generally won't buy the most expensive dish on the menu, they will order the second most expensive dish. Thus, by creating an expensive dish, a restaurateur can lure customers into ordering the second most expensive choice (which can be cleverly engineered to deliver a higher profit margin).[1]

SO LET'S RUN through the *Economist*'s sleight of hand in slow motion.

As you recall, the choices were:

1. Internet-only subscription for $59.
2. Print-only subscription for $125.
3. Print-and-Internet subscription for $125.

When I gave these options to 100 students at MIT's Sloan School of Management, they opted as follows:

1. Internet-only subscription for $59—16 students
2. Print-only subscription for $125—zero students
3. Print-and-Internet subscription for $125—84 students

So far these Sloan MBAs are smart cookies. They all saw the advantage in the print-and-Internet offer over the print-only offer. But were they influenced by the mere presence of the print-only option (which I will henceforth, and for good reason, call the "decoy"). In other words, suppose that I removed the decoy so that the choices would be the ones seen in the figure below:


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Would the students respond as before (16 for the Internet only and 84 for the combination)?

Certainly they would react the same way, wouldn't they? After all, the option I took out was one that no one selected, so it should make no difference. Right?

Au contraire! This time, 68 of the students chose the Internet-only option for $59, up from 16 before. And only 32 chose the combination subscription for $125, down from 84 before.*

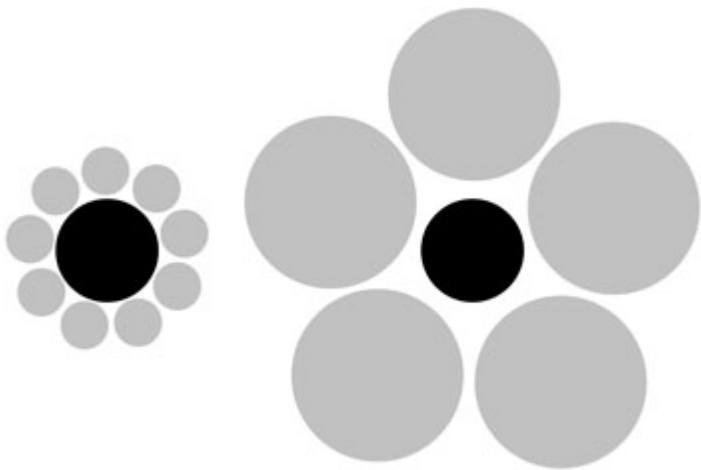

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What could have possibly changed their minds? Nothing rational, I assure you. It was the mere presence of the decoy that sent 84 of them to the print-and-Internet option (and 16 to the Internet-only option). And the absence of the decoy had them choosing differently, with 32 for print-and-Internet and 68 for Internet-only.

This is not only irrational but predictably irrational as well. Why? I'm glad you asked.

LET ME OFFER you this visual demonstration of relativity.



As you can see, the middle circle can't seem to stay the same size. When placed among the larger circles, it gets smaller. When placed among the smaller circles, it grows bigger. The middle circle is the same size in both positions, of course, but it appears to change depending on what we place next to it.

This might be a mere curiosity, but for the fact that it mirrors the way the mind is wired: we are always looking at the things around us in relation to others. We can't help it. This holds true not only for physical things—toasters, bicycles, puppies, restaurant entrées, and spouses—but for experiences such as vacations and educational options, and for ephemeral things as well: emotions, attitudes, and points of view.

We always compare jobs with jobs, vacations with vacations, lovers with lovers, and wines with wines. All this relativity reminds me of a line from the film *Crocodile Dundee,* when a street hoodlum pulls a switchblade against our hero, Paul Hogan. "You call that a knife?" says Hogan incredulously, withdrawing a bowie blade from the back of his boot. "Now *this*," he says with a sly grin, "is a knife."

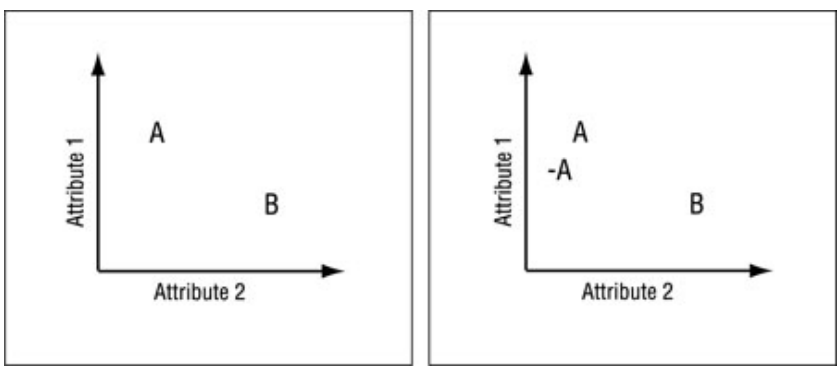
RELATIVITY IS (RELATIVELY) easy to understand. But there's one aspect of relativity that consistently trips us up. It's this: we not only tend to compare things with one another but also tend to focus on comparing things that are easily comparable —and avoid comparing things that cannot be compared easily.

That may be a confusing thought, so let me give you an example. Suppose you're shopping for a house in a new town. Your real estate agent guides you to three houses, all of which interest you. One of them is a contemporary, and two are colonials. All three cost about the same; they are all equally desirable; and the only difference is that one of the colonials (the "decoy") needs a new roof and the owner has knocked a few thousand dollars off the price to cover the additional expense.

So which one will you choose?

The chances are good that you will *not* choose the contemporary and you will *not* choose the colonial that needs the new roof, but you will choose the other colonial. Why? Here's the rationale (which is actually quite irrational). We like to make decisions based on comparisons. In the case of the three houses, we don't know much about the contemporary (we don't have another house to compare it with), so that house goes on the sidelines. But we do know that one of the colonials is better than the other one. That is, the colonial with the good roof is better than the one with the bad roof. Therefore, we will reason that it is better overall and go for the colonial with the good roof, spurning the contemporary and the colonial that needs a new roof.

To better understand how relativity works, consider the following illustration:



In the left side of this illustration we see two options, each of which is better on a different attribute. Option (A) is better on attribute 1—let's say quality. Option (B) is better on attribute 2—let's say beauty. Obviously these are two very different options and the choice between them is not simple. Now consider what happens if we add another option, called (–A) (see the right side of the illustration). This option is clearly worse than option (A), but it is also very similar to it, making the comparison between them easy, and suggesting that (A) is not only better than (–A) but also better than (B).

In essence, introducing (–A), the decoy, creates a simple relative comparison with (A), and hence makes (A) look better, not just relative to (–A), but overall as well. As a consequence, the inclusion of (–A) in the set, even if no one ever selects it, makes people more likely to make (A) their final choice.

Does this selection process sound familiar? Remember the pitch put together

by the *Economist*? The marketers there knew that we didn't know whether we wanted an Internet subscription or a print subscription. But they figured that, of the three options, the print-and-Internet combination would be the offer we would take.

Here's another example of the decoy effect. Suppose you are planning a honeymoon in Europe. You've already decided to go to one of the major romantic cities and have narrowed your choices to Rome and Paris, your two favorites. The travel agent presents you with the vacation packages for each city, which includes airfare, hotel accommodations, sightseeing tours, and a free breakfast every morning. Which would you select?

For most people, the decision between a week in Rome and a week in Paris is not effortless. Rome has the Coliseum; Paris, the Louvre. Both have a romantic ambience, fabulous food, and fashionable shopping. It's not an easy call. But suppose you were offered a third option: Rome without the free breakfast, called -Rome or the decoy.

If you were to consider these three options (Paris, Rome, -Rome), you would immediately recognize that whereas Rome with the free breakfast is about as appealing as Paris with the free breakfast, the inferior option, which is Rome without the free breakfast, is a step down. The comparison between the clearly inferior option (-Rome) makes Rome with the free breakfast seem even better. In fact, -Rome makes Rome with the free breakfast look so good that you judge it to be even better than the difficult-to-compare option, Paris with the free breakfast.

ONCE YOU SEE the decoy effect in action, you realize that it is the secret agent in more decisions than we could imagine. It even helps us decide whom to date—and, ultimately, whom to marry. Let me describe an experiment that explored just this subject.

As students hurried around MIT one cold weekday, I asked some of them whether they would allow me to take their pictures for a study. In some cases, I got disapproving looks. A few students walked away. But most of them were happy to participate, and before long, the card in my digital camera was filled with images of smiling students. I returned to my office and printed 60 of them—30 of women and 30 of men.

The following week I made an unusual request of 25 of my undergraduates. I asked them to pair the 30 photographs of men and the 30 of women by physical attractiveness (matching the men with other men, and the women with other women). That is, I had them pair the Brad Pitts and the George Clooneys of MIT, as well as the Woody Allens and the Danny DeVitos (sorry, Woody and Danny). Out of these 30 pairs, I selected the six pairs—three female pairs and three male pairs—that my students seemed to agree were most alike.

Now, like Dr. Frankenstein himself, I set about giving these faces my special treatment. Using Photoshop, I mutated the pictures just a bit, creating a slightly but noticeably less attractive version of each of them. I found that just the slightest movement of the nose threw off the symmetry. Using another tool, I enlarged one eye, eliminated some of the hair, and added traces of acne.

No flashes of lightning illuminated my laboratory; nor was there a baying of

the hounds on the moor. But this was still a good day for science. By the time I was through, I had the MIT equivalent of George Clooney in his prime (A) and the MIT equivalent of Brad Pitt in his prime (B), and also a George Clooney with a slightly drooping eye and thicker nose (–A, the decoy) and a less symmetrical version of Brad Pitt (-B, another decoy). I followed the same procedure for the less attractive pairs. I had the MIT equivalent of Woody Allen with his usual lopsided grin (A) and Woody Allen with an unnervingly misplaced eye (–A), as well as Danny DeVito (B) and a slightly disfigured version of Danny DeVito (–B).

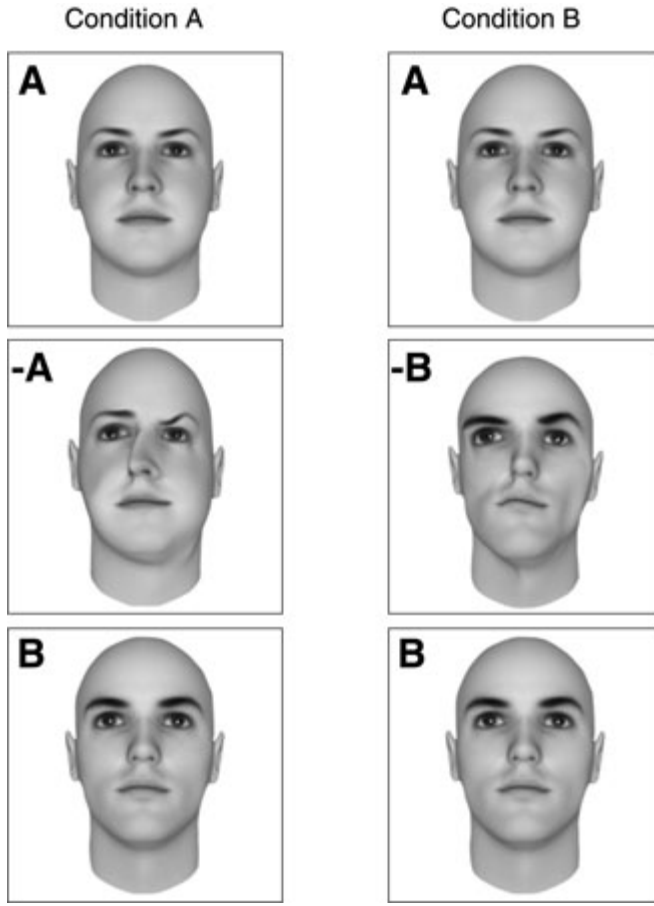
For each of the 12 photographs, in fact, I now had a regular version as well as an inferior (–) decoy version. (See the illustration for an example of the two conditions used in the study.)

It was now time for the main part of the experiment. I took all the sets of pictures and made my way over to the student union. Approaching one student after another, I asked each to participate. When the students agreed, I handed them a sheet with three pictures (as in the illustration here). Some of them had the regular picture (A), the decoy of that picture (–A), and the other regular picture (B). Others had the regular picture (B), the decoy of that picture (–B), and the other regular picture (A).

For example, a set might include a regular Clooney (A), a decoy Clooney (–A), and a regular Pitt (B); or a regular Pitt (B), a decoy Pitt (–B), and a regular Clooney (A). After selecting a sheet with either male or female pictures, according to their preferences, I asked the students to circle the people they would pick to go on a date with, if they had a choice. All this took quite a while, and when I was done, I had distributed 600 sheets.

What was my motive in all this? Simply to determine if the existence of the distorted picture (–A or –B) would push my participants to choose the similar but undistorted picture. In other words, would a slightly less attractive George Clooney (–A) push the participants to choose the perfect George Clooney over the perfect Brad Pitt?

There were no pictures of Brad Pitt or George Clooney in my experiment, of course. Pictures (A) and (B) showed ordinary students. But do you remember how the existence of a colonial-style house needing a new roof might push you to choose a perfect colonial over a contemporary house—simply because the decoy colonial would give you something against which to compare the regular colonial? And in the *Economist*'s ad, didn't the print-only option for $125 push people to take the print-and-Internet option for $125? Similarly, would the existence of a less perfect person (–A or –B) push people to choose the perfect one (A or B), simply because the decoy option served as a point of comparison?



Note: For this illustration, I used computerized faces, not those of the MIT students. And of course, the letters did not appear on the original sheets.

It did. Whenever I handed out a sheet that had a regular picture, its inferior version, and another regular picture, the participants said they would prefer to date the "regular" person—the one who was similar, but clearly superior, to the distorted version—over the other, undistorted person on the sheet. This was not just a close call—it happened 75 percent of the time.

To explain the decoy effect further, let me tell you something about bread-making machines. When Williams-Sonoma first introduced a home "bread bakery" machine (for $275), most consumers were not interested. What was a home bread-making machine, anyway? Was it good or bad? Did one really need home-baked bread? Why not just buy a fancy coffeemaker sitting nearby instead? Flustered by poor sales, the manufacturer of the bread machine brought in a marketing research firm, which suggested a fix: introduce an additional model of

the bread maker, one that was not only larger but priced about 50 percent higher than the initial machine.

Now sales began to rise (along with many loaves of bread), though it was not the large bread maker that was being sold. Why? Simply because consumers now had two models of bread makers to choose from. Since one was clearly larger and much more expensive than the other, people didn't have to make their decision in a vacuum. They could say: "Well, I don't know much about bread makers, but I do know that if I were to buy one, I'd rather have the smaller one for less money." And that's when bread makers began to fly off the shelves.[2]

OK for bread makers. But let's take a look at the decoy effect in a completely different situation. What if you are single, and hope to appeal to as many attractive potential dating partners as possible at an upcoming singles event? My advice would be to bring a friend who has your basic physical characteristics (similar coloring, body type, facial features), but is slightly less attractive (–you).

Why? Because the folks you want to attract will have a hard time evaluating you with no comparables around. However, if you are compared with a "–you," the decoy friend will do a lot to make you look better, not just in comparison with the decoy but also in general, and in comparison with all the other people around. It may sound irrational (and I can't guarantee this), but the chances are good that you will get some extra attention. Of course, don't just stop at looks. If great conversation will win the day, be sure to pick a friend for the singles event who can't match your smooth delivery and rapier wit. By comparison, you'll sound great.

Now that you know this secret, be careful: when a similar but better-looking friend of the same sex asks you to accompany him or her for a night out, you might wonder whether you have been invited along for your company or merely as a decoy.

RELATIVITY HELPS US make decisions in life. But it can also make us downright miserable. Why? Because jealousy and envy spring from comparing our lot in life with that of others.

It was for good reason, after all, that the Ten Commandments admonished, "Neither shall you desire your neighbor's house nor field, or male or female slave, or donkey or anything that belongs to your neighbor." This might just be the toughest commandment to follow, considering that by our very nature we are wired to compare.

Modern life makes this weakness even more pronounced. A few years ago, for instance, I met with one of the top executives of one of the big investment companies. Over the course of our conversation he mentioned that one of his employees had recently come to him to complain about his salary.

"How long have you been with the firm?" the executive asked the young man.

"Three years. I came straight from college," was the answer.

"And when you joined us, how much did you expect to be making in three years?"

“I was hoping to be making about a hundred thousand.”

The executive eyed him curiously.

“And now you are making almost three hundred thousand, so how can you possibly complain?” he asked.

“Well,” the young man stammered, “it’s just that a couple of the guys at the desks next to me, they’re not any better than I am, and they are making three hundred ten.”

The executive shook his head.

An ironic aspect of this story is that in 1993, federal securities regulators forced companies, for the first time, to reveal details about the pay and perks of their top executives. The idea was that once pay was in the open, boards would be reluctant to give executives outrageous salaries and benefits. This, it was hoped, would stop the rise in executive compensation, which neither regulation, legislation, nor shareholder pressure had been able to stop. And indeed, it needed to stop: in 1976 the average CEO was paid 36 times as much as the average worker. By 1993, the average CEO was paid 131 times as much.

But guess what happened. Once salaries became public information, the media regularly ran special stories ranking CEOs by pay. Rather than suppressing the executive perks, the publicity had CEOs in America comparing their pay with that of everyone else. In response, executives’ salaries skyrocketed. The trend was further “helped” by compensation consulting firms (scathingly dubbed “Ratchet, Ratchet, and Bingo” by the investor Warren Buffett) that advised their CEO clients to demand outrageous raises. The result? Now the average CEO makes about 369 times as much as the average worker—about three times the salary before executive compensation went public.

Keeping that in mind, I had a few questions for the executive I met with.

“What would happen,” I ventured, “if the information in your salary database became known throughout the company?”

The executive looked at me with alarm. “We could get over a lot of things here—insider trading, financial scandals, and the like—but if everyone knew everyone else’s salary, it would be a true catastrophe. All but the highest-paid individual would feel underpaid—and I wouldn’t be surprised if they went out and looked for another job.”

Isn’t this odd? It has been shown repeatedly that the link between amount of salary and happiness is not as strong as one would expect it to be (in fact, it is rather weak). Studies even find that countries with the “happiest” people are not among those with the highest personal income. Yet we keep pushing toward a higher salary. Much of that can be blamed on sheer envy. As H. L. Mencken, the twentieth-century journalist, satirist, social critic, cynic, and freethinker noted, a man’s satisfaction with his salary depends on (are you ready for this?) whether he makes more than his wife’s sister’s husband. Why the wife’s sister’s husband? Because (and I have a feeling that Mencken’s wife kept him fully informed of her sister’s husband’s salary) this is a comparison that is salient and readily available.*

All this extravagance in CEOs’ pay has had a damaging effect on society. Instead of causing shame, every new outrage in compensation encourages other

CEOs to demand even more. “In the Web World,” according to a headline in the *New York Times*, the “Rich Now Envy the Superrich.”

In another news story, a physician explained that he had graduated from Harvard with the dream of someday receiving a Nobel Prize for cancer research. This was his goal. This was his dream. But a few years later, he realized that several of his colleagues were making more as medical investment advisers at Wall Street firms than he was making in medicine. He had previously been happy with his income, but hearing of his friends’ yachts and vacation homes, he suddenly felt very poor. So he took another route with his career—the route of Wall Street.[3] By the time he arrived at his twentieth class reunion, he was making 10 times what most of his peers were making in medicine. You can almost see him, standing in the middle of the room at the reunion, drink in hand—a large circle of influence with smaller circles gathering around him. He had not won the Nobel Prize, but he had relinquished his dreams for a Wall Street salary, for a chance to stop feeling “poor.” Is it any wonder that family practice physicians, who make an average of $160,000 a year, are in short supply?*

CAN WE DO anything about this problem of relativity?

The good news is that we can sometimes control the “circles” around us, moving toward smaller circles that boost our relative happiness. If we are at our class reunion, and there’s a “big circle” in the middle of the room with a drink in his hand, boasting of his big salary, we can consciously take several steps away and talk with someone else. If we are thinking of buying a new house, we can be selective about the open houses we go to, skipping the houses that are above our means. If we are thinking about buying a new car, we can focus on the models that we can afford, and so on.

We can also change our focus from narrow to broad. Let me explain with an example from a study conducted by two brilliant researchers, Amos Tversky and Daniel Kahneman. Suppose you have two errands to run today. The first is to buy a new pen, and the second is to buy a suit for work. At an office supply store, you find a nice pen for $25. You are set to buy it, when you remember that the same pen is on sale for $18 at another store 15 minutes away. What would you do? Do you decide to take the 15-minute trip to save the $7? Most people faced with this dilemma say that they would take the trip to save the $7.

Now you are on your second task: you’re shopping for your suit. You find a luxurious gray pinstripe suit for $455 and decide to buy it, but then another customer whispers in your ear that the exact same suit is on sale for only $448 at another store, just 15 minutes away. Do you make this second 15-minute trip? In this case, most people say that they would not.

But what is going on here? Is 15 minutes of your time worth $7, or isn’t it? In reality, of course, $7 is $7—no matter how you count it. The only question you should ask yourself in these cases is whether the trip across town, and the 15 extra minutes it would take, is worth the extra $7 you would save. Whether the amount from which this $7 will be saved is $10 or $10,000 should be irrelevant.

This is the problem of relativity—we look at our decisions in a relative way and compare them locally to the available alternative. We compare the relative

advantage of the cheap pen with the expensive one, and this contrast makes it obvious to us that we should spend the extra time to save the $7. At the same time, the relative advantage of the cheaper suit is very small, so we spend the extra $7.

This is also why it is so easy for a person to add $200 to a $5,000 catering bill for a soup entrée, when the same person will clip coupons to save 25 cents on a one-dollar can of condensed soup. Similarly, we find it easy to spend $3,000 to upgrade to leather seats when we buy a new $25,000 car, but difficult to spend the same amount on a new leather sofa (even though we know we will spend more time at home on the sofa than in the car). Yet if we just thought about this in a broader perspective, we could better assess what we could do with the $3,000 that we are considering spending on upgrading the car seats. Would we perhaps be better off spending it on books, clothes, or a vacation? Thinking broadly like this is not easy, because making relative judgments is the natural way we think. Can you get a handle on it? I know someone who can.

He is James Hong, cofounder of the Hotornot.com rating and dating site. (James, his business partner Jim Young, Leonard Lee, George Loewenstein, and I recently worked on a research project examining how one's own "attractiveness" affects one's view of the "attractiveness" of others.)

For sure, James has made a lot of money, and he sees even more money all around him. One of his good friends, in fact, is a founder of PayPal and is worth tens of millions. But Hong knows how to make the circles of comparison in his life smaller, not larger. In his case, he started by selling his Porsche Boxster and buying a Toyota Prius in its place.[4]

"I don't want to live the life of a Boxster," he told the *New York Times*, "because when you get a Boxster you wish you had a 911, and you know what people who have 911s wish they had? They wish they had a Ferrari."

That's a lesson we can all learn: the more we have, the more we want. And the only cure is to break the cycle of relativity.

Reflections on Dating and Relativity

In Chapter 1, on relativity, I offered some dating advice. I proposed that if you want to go bar-hopping, you should consider taking along someone who looks similar to you but who is slightly less attractive than you are. Because of the relative nature of evaluations, others would perceive you not only as cuter than your decoy, but also as better-looking than other people in the bar. By the same logic, I also pointed out that the flip side of this coin is that if someone invites you to be his or her wingman (or wingwoman), you can easily figure out what your friend really thinks of you. As it turns out, I forgot to include one important warning that came courtesy of the daughter of a colleague of mine from MIT.

"Susan" was an undergraduate at Cornell who wrote to me, saying she was delighted with my trick and that it had worked wonderfully for her. Once she found the ideal decoy, her social life improved. But a few weeks later she wrote again, telling me that she'd been at a party where she'd had a few drinks. For some odd reason, she decided to tell her friend why she invited her to accompany her everywhere. The friend was understandably upset, and the story did not end well.

The moral of this story? Never, ever tell your friend why you're asking him or her to come with you. Your friend might have suspicions, but for the love of God, don't eliminate all doubt.

Reflections on Traveling and Relativity

When *Predictably Irrational* came out, I went on a book tour that lasted six straight weeks. I traveled from airport to airport, city to city, radio station to radio station, talking to reporters and readers for what seemed like days on end, without engaging in any type of personal discussion. Every conversation was short, "all business," and focused on my research. There was no time to enjoy a cup of coffee or a beer with any of the wonderful people I encountered.

Toward the end of the tour I found myself in Barcelona. There I met Jon, an American tourist who, like me, did not speak any Spanish. We felt an immediate camaraderie. I imagine this kind of bonding happens often with travelers from the same country who are far from home and find themselves sharing observations about how they differ from the locals around them. Jon and I ended up having a wonderful dinner and a deeply personal discussion. He told me things that he seemed not to have shared before, and I did the same. There was an unusual closeness between us, as if we were long-lost brothers. After staying up very late talking, we both needed to sleep. We would not have a chance to meet again before parting ways the following morning, so we exchanged e-mail addresses. This was a mistake.

About six months later, Jon and I met again for lunch in New York. This time, it was hard for me to figure out why I'd felt such a connection with him, and no doubt he felt the same. We had a perfectly amicable and interesting lunch, but it lacked the intensity of our first meeting, and I was left wondering why.

In retrospect, I think it was because I'd fallen victim to the effects of relativity. When Jon and I first met, everyone around us was Spanish, and as cultural outsiders we were each other's best alternative for companionship. But once we returned home to our beloved American families and friends, the basis for comparison switched back to "normal" mode. Given this situation, it was hard to understand why Jon or I would want to spend another evening in each other's company rather than with those we love.

My advice? Understand that relativity is everywhere, and that we view everything through its lens—rose-colored or otherwise. When you meet someone in a different country or city and it seems that you have a magical connection, realize that the enchantment might be limited to the surrounding circumstances. This realization might prevent you from subsequent disenchantment.

CHAPTER 2

The Fallacy of Supply and Demand

Why the Price of Pearls—and Everything Else—
Is Up in the Air

At the onset of World War II, an Italian diamond dealer, James Assael, fled Europe for Cuba. There, he found a new livelihood: the American army needed waterproof watches, and Assael, through his contacts in Switzerland, was able to fill the demand.

When the war ended, Assael's deal with the U.S. government dried up, and he was left with thousands of Swiss watches. The Japanese needed watches, of course. But they didn't have any money. They did have pearls, though—many thousands of them. Before long, Assael had taught his son how to barter Swiss watches for Japanese pearls. The business blossomed, and shortly thereafter, the son, Salvador Assael, became known as the "pearl king."

The pearl king had moored his yacht at Saint-Tropez one day in 1973, when a dashing young Frenchman, Jean-Claude Brouillet, came aboard from an adjacent yacht. Brouillet had just sold his air-freight business and with the proceeds had purchased an atoll in French Polynesia—a blue-lagooned paradise for himself and his young Tahitian wife. Brouillet explained that its turquoise waters abounded with black-lipped oysters, *Pinctada margaritifera.* And from the black lips of those oysters came something of note: black pearls.

At the time there was no market for Tahitian black pearls, and little demand. But Brouillet persuaded Assael to go into business with him. Together they would harvest black pearls and sell them to the world. At first, Assael's marketing efforts failed. The pearls were gunmetal gray, about the size of musket balls, and he returned to Polynesia without having made a single sale. Assael could have dropped the black pearls altogether or sold them at a low price to a discount store. He could have tried to push them to consumers by bundling them together with a few white pearls. But instead Assael waited a year, until the operation had produced some better specimens, and then brought them to an old friend, Harry Winston, the legendary gemstone dealer. Winston agreed to put them in the window of his store on Fifth Avenue, with an outrageously high price tag attached. Assael, meanwhile, commissioned a full-page advertisement that ran in the glossiest of magazines. There, a string of Tahitian black pearls glowed, set among a spray of diamonds, rubies, and emeralds.

The pearls, which had shortly before been the private business of a cluster of black-lipped oysters, hanging on a rope in the Polynesian sea, were soon parading through Manhattan on the arched necks of the city's most prosperous divas. Assael had taken something of dubious worth and made it fabulously fine. Or, as Mark Twain once noted about Tom Sawyer, "Tom had discovered a great law of human action, namely, that in order to make a man covet a thing, it is only

necessary to make the thing difficult to attain."

HOW DID THE pearl king do it? How did he persuade the cream of society to become passionate about Tahitian black pearls—and pay him royally for them? In order to answer this question, I need to explain something about baby geese.

A few decades ago, the naturalist Konrad Lorenz discovered that goslings, upon breaking out of their eggs, become attached to the first moving object they encounter (which is generally their mother). Lorenz knew this because in one experiment *he* became the first thing they saw, and they followed him loyally from then on through adolescence. With that, Lorenz demonstrated not only that goslings make initial decisions based on what's available in their environment, but that they stick with a decision once it has been made. Lorenz called this natural phenomenon *imprinting.*

Is the human brain, then, wired like that of a gosling? Do our first impressions and decisions become imprinted? And if so, how does this imprinting play out in our lives? When we encounter a new product, for instance, do we accept the first price that comes before our eyes? And more importantly, does that price (which in academic lingo we call an *anchor*) have a long-term effect on our willingness to pay for the product from then on?

It seems that what's good for the goose is good for humans as well. And this includes anchoring. From the beginning, for instance, Assael "anchored" his pearls to the finest gems in the world—and the prices followed forever after. Similarly, once we buy a new product at a particular price, we become anchored to that price. But how exactly does this work? Why do we accept anchors?

Consider this: if I asked you for the last two digits of your social security number (mine are 79), then asked you whether you would pay this number in dollars (for me this would be $79) for a particular bottle of Côtes du Rhône 1998, would the mere suggestion of that number influence how much you would be willing to spend on wine? Sounds preposterous, doesn't it? Well, wait until you see what happened to a group of MBA students at MIT a few years ago.

"NOW HERE WE have a nice Côtes du Rhône Jaboulet Parallel," said Drazen Prelec, a professor at MIT's Sloan School of Management, as he lifted a bottle admiringly. "It's a 1998."

At the time, sitting before him were the 55 students from his marketing research class. On this day, Drazen, George Loewenstein (a professor at Carnegie Mellon University), and I would have an unusual request for this group of future marketing pros. We would ask them to jot down the last two digits of their social security numbers and tell us whether they would pay this amount for a number of products, including the bottle of wine. Then, we would ask them to actually bid on these items in an auction.

What were we trying to prove? The existence of what we called *arbitrary coherence*. The basic idea of arbitrary coherence is this: although initial prices (such as the price of Assael's pearls) are "arbitrary," once those prices are established in our minds they will shape not only present prices but also future prices (this makes them "coherent"). So, would thinking about one's social security number

be enough to create an anchor? And would that initial anchor have a long-term influence? That's what we wanted to see.

"For those of you who don't know much about wines," Drazen continued, "this bottle received eighty-six points from *Wine Spectator.* It has the flavor of red berry, mocha, and black chocolate; it's a medium-bodied, medium-intensity, nicely balanced red, and it makes for delightful drinking."

Drazen held up another bottle. This was a Hermitage Jaboulet La Chapelle, 1996, with a 92-point rating from the *Wine Advocate* magazine. "The finest La Chapelle since 1990," Drazen intoned, while the students looked up curiously. "Only 8,100 cases made . . ."

In turn, Drazen held up four other items: a cordless trackball (TrackMan Marble FX by Logitech); a cordless keyboard and mouse (iTouch by Logitech); a design book (*The Perfect Package: How to Add Value through Graphic Design*); and a one-pound box of Belgian chocolates by Neuhaus.

Drazen passed out forms that listed all the items. "Now I want you to write the last two digits of your social security number at the top of the page," he instructed. "And then write them again next to each of the items in the form of a price. In other words, if the last two digits are twenty-three, write twenty-three dollars."

"Now when you're finished with that," he added, "I want you to indicate on your sheets—with a simple yes or no—whether you would pay that amount for each of the products."

When the students had finished answering yes or no to each item, Drazen asked them to write down the maximum amount they were willing to pay for each of the products (their bids). Once they had written down their bids, the students passed the sheets up to me and I entered their responses into my laptop and announced the winners. One by one the student who had made the highest bid for each of the products would step up to the front of the class, pay for the product,* and take it with them.

The students enjoyed this class exercise, but when I asked them if they felt that writing down the last two digits of their social security numbers had influenced their final bids, they quickly dismissed my suggestion. No way!

When I got back to my office, I analyzed the data. Did the digits from the social security numbers serve as anchors? Remarkably, they did: the students with the highest-ending social security digits (from 80 to 99) bid highest, while those with the lowest-ending numbers (1 to 20) bid lowest. The top 20 percent, for instance, bid an average of $56 for the cordless keyboard; the bottom 20 percent bid an average of $16. In the end, we could see that students with social security numbers ending in the upper 20 percent placed bids that were 216 to 346 percent higher than those of the students with social security numbers ending in the lowest 20 percent (see table on the facing page).

Now if the last two digits of your social security number are a high number I know what you must be thinking: "I've been paying too much for everything my entire life!" This is not the case, however. Social security numbers were the anchor in this experiment only because we requested them. We could have just as well asked for the current temperature or the manufacturer's suggested retail

price (MSRP). Any question, in fact, would have created the anchor. Does that seem rational? Of course not. But that's the way we are—goslings, after all.*

Average prices paid for the various products for each of the five groups of final digits in social security numbers, and the correlations between these digits and the bids submitted in the auction.

	Range of last two digits of SS number					
Products	**00–19**	**20–39**	**40–59**	**60–79**	**80–99**	**Correlations***
Cordless trackball	$8.64	$11.82	$13.45	$21.18	$26.18	0.42
Cordless keyboard	$16.09	$26.82	$29.27	$34.55	$55.64	0.52
Design book	$12.82	$16.18	$15.82	$19.27	$30.00	0.32
Neuhaus chocolates	$9.55	$10.64	$12.45	$13.27	$20.64	0.42
1998 Côtes du Rhône	$8.64	$14.45	$12.55	$15.45	$27.91	0.33
1996 Hermitage	$11.73	$22.45	$18.09	$24.55	$37.55	0.33

*Correlation is a statistical measure of how much the movement of two variables is related. The range of possible correlations is between –1 and +1, where a correlation of 0 means that the change in value of one variable has no bearing on the change in value of the other variable.

The data had one more interesting aspect. Although the willingness to pay for these items was arbitrary, there was also a logical, coherent aspect to it. When we looked at the bids for the two pairs of related items (the two wines and the two computer components), their relative prices seemed incredibly logical. Everyone was willing to pay more for the keyboard than for the trackball—and also pay more for the 1996 Hermitage than for the 1998 Côtes du Rhône. The significance of this is that once the participants were willing to pay a certain price for one product, their willingness to pay for other items in the same product category was judged relative to that first price (the anchor).

This, then, is what we call arbitrary coherence. Initial prices are largely "arbitrary" and can be influenced by responses to random questions; but once those prices are established in our minds, they shape not only what we are willing to pay for an item, but also how much we are willing to pay for related products (this makes them coherent).

Now I need to add one important clarification to the story I've just told. In life we are bombarded by prices. We see the manufacturer's suggested retail price (MSRP) for cars, lawn mowers, and coffeemakers. We get the real estate agent's spiel on local housing prices. But price tags by themselves are not necessarily anchors. They become anchors when we contemplate buying a product or service at that particular price. That's when the imprint is set. From then on, we are willing to accept a range of prices—but as with the pull of a bungee cord, we always refer back to the original anchor. Thus the first anchor influences not only

the immediate buying decision but many others that follow.

We might see a 57-inch LCD high-definition television on sale for $3,000, for instance. The price tag is not the anchor. But if we decide to buy it (or seriously contemplate buying it) at that price, then the decision becomes our anchor henceforth in terms of LCD television sets. That's our peg in the ground, and from then on—whether we shop for another set or merely have a conversation at a backyard cookout—all other high-definition televisions are judged relative to that price.

Anchoring influences all kinds of purchases. Uri Simonsohn (a professor at the University of Pennsylvania) and George Loewenstein, for example, found that people who move to a new city generally remain anchored to the prices they paid for housing in their former city. In their study they found that people who move from inexpensive markets (say, Lubbock, Texas) to moderately priced cities (say, Pittsburgh) don't increase their spending to fit the new market.* Rather, these people spend an amount similar to what they were used to in the previous market, even if this means having to squeeze themselves and their families into smaller or less comfortable homes. Likewise, transplants from more expensive cities sink the same dollars into their new housing situation as they did in the past. People who move from Los Angeles to Pittsburgh, in other words, don't generally downsize their spending much once they hit Pennsylvania: they spend an amount similar to what they used to spend in Los Angeles.

It seems that we get used to the particularities of our housing markets and don't readily change. The only way out of this box, in fact, is to rent a home in the new location for a year or so. That way, we adjust to the new environment—and, after a while, we are able to make a purchase that aligns with the local market.

SO WE ANCHOR ourselves to initial prices. But do we hop from one anchor price to another (flip-flopping, if you will), continually changing our willingness to pay? Or does the first anchor we encounter become our anchor for a long time and for many decisions? To answer this question, we decided to conduct another experiment—one in which we attempted to lure our participants from old anchors to new ones.

For this experiment we enlisted some undergraduate students, some graduate students, and some investment bankers who had come to the campus to recruit new employees for their firms. Once the experiment started we presented our participants with three different sounds, and following each, asked them if they would be willing to get paid a particular amount of money (which served as the price anchor) for hearing those sounds again. One sound was a 30-second high-pitched 3,000-hertz sound, somewhat like someone screaming in a high-pitched voice. Another was a 30-second full-spectrum noise (also called white noise), which is similar to the noise a television set makes when there is no reception. The third was a 30-second oscillation between high-pitched and low-pitched sounds. (I am not sure if the bankers understood exactly what they were about to experience, but maybe even our annoying sounds were less annoying than talking about investment banking.)

We used sounds because there is no existing market for annoying sounds (so

the participants couldn't use a market price as a way to think about the value of these sounds). We also used annoying sounds, specifically, because no one likes such sounds (if we had used classical music, some would have liked it better than others). As for the sounds themselves, I selected them after creating hundreds of sounds, choosing these three because they were, in my opinion, equally annoying.

We placed our participants in front of computer screens at the lab, and had them clamp headphones over their ears.

As the room quieted down, the first group saw this message appear in front of them: "In a few moments we are going to play a new unpleasant tone over your headset. We are interested in how annoying you find it. Immediately after you hear the tone, we will ask you whether, hypothetically, you would be willing to repeat the same experience in exchange for a payment of 10 cents." The second group got the same message, only with an offer of 90 cents rather than 10 cents.

Would the anchor prices make a difference? To find out, we turned on the sound—in this case the irritating 30-second, 3,000-hertz squeal. Some of our participants grimaced. Others rolled their eyes.

When the screeching ended, each participant was presented with the anchoring question, phrased as a hypothetical choice: Would the participant be willing, hypothetically, to repeat the experience for a cash payment (which was 10 cents for the first group and 90 cents for the second group)? After answering this anchoring question, the participants were asked to indicate on the computer screen the lowest price they would demand to listen to the sound again. This decision was real, by the way, as it would determine whether they would hear the sound again—and get paid for doing so.*

Soon after the participants entered their prices, they learned the outcome. Participants whose price was sufficiently low "won" the sound, had the (unpleasant) opportunity to hear it again, and got paid for doing so. The participants whose price was too high did not listen to the sound and were not paid for this part of the experiment.

What was the point of all this? We wanted to find out whether the first prices that we suggested (10 cents and 90 cents) had served as an anchor. And indeed they had. Those who first faced the hypothetical decision about whether to listen to the sound for 10 cents needed much less money to be willing to listen to this sound again (33 cents on average) relative to those who first faced the hypothetical decision about whether to listen to the sound for 90 cents—this second group demanded more than twice the compensation (73 cents on average) for the same annoying experience. Do you see the difference that the suggested price had?

BUT THIS WAS only the start of our exploration. We also wanted to know how influential the anchor would be in future decisions. Suppose we gave the participants an opportunity to drop this anchor and run for another? Would they do it? To put it in terms of goslings, would they swim across the pond after their original imprint and then, midway, swing their allegiance to a new mother goose? In terms of goslings, I think you know that they would stick with the original mom. But what about humans? The next two phases of the experiment would

enable us to answer these questions.

In the second phase of the experiment, we took participants from the previous 10-cents and 90-cents groups and treated them to 30 seconds of a white, wooshing noise. "Hypothetically, would you listen to this sound again for 50 cents?" we asked them at the end. The respondents pressed a button on their computers to indicate yes or no.

"OK, *how much* would you need to be paid for this?" we asked. Our participants typed in their lowest price; the computer did its thing; and, depending on their bids, some participants listened to the sound again and got paid and some did not. When we compared the prices, the 10-cents group offered much lower bids than the 90-cents group. This means that although both groups had been equally exposed to the suggested 50 cents, as their focal anchoring response (to "Hypothetically, would you listen to this sound again for 50 cents?"), the first anchor in this annoying sound category (which was 10 cents for some and 90 cents for others) predominated.

Why? Perhaps the participants in the 10-cents group said something like the following to themselves: "Well, I listened previously to that annoying sound for a low amount. This sound is not much different. So if I said a low amount for the previous one, I guess I could bear this sound for about the same price." Those who were in the 90-cents group used the same type of logic, but because their starting point was different, so was their ending point. These individuals told themselves, "Well, I listened previously to that annoying sound for a high amount. This sound is not much different. So since I said a high amount for the previous one, I guess I could bear this sound for about the same price." Indeed, the effect of the first anchor held—indicating that anchors have an enduring effect for present prices as well as for future prices.

There was one more step to this experiment. This time we had our participants listen to the oscillating sound that rose and fell in pitch for 30 seconds. We asked our 10-cents group, "Hypothetically, would you listen to this sound again for 90 cents?" Then we asked our 90-cents group, "Would you listen to this sound again for 10 cents?" Having flipped our anchors, we would now see which one, the local anchor or the first anchor, exerted the greatest influence.

Once again, the participants typed in yes or no. Then we asked them for real bids: "How much would it take for you to listen to this again?" At this point, they had a history with three anchors: the first one they encountered in the experiment (either 10 cents or 90 cents), the second one (50 cents), and the most recent one (either 90 cents or 10 cents). Which one of these would have the largest influence on the price they demanded to listen to the sound?

Again, it was as if our participants' minds told them, "If I listened to the first sound for x cents, and listened to the second sound for x cents as well, then I can surely do this one for x cents, too!" And that's what they did. Those who had first encountered the 10-cent anchor accepted low prices, even after 90 cents was suggested as the anchor. On the other hand, those who had first encountered the 90-cent anchor kept on demanding much higher prices, regardless of the anchors that followed.

What did we show? That our first decisions resonate over a long sequence of decisions. First impressions are important, whether they involve remembering

that our first DVD player cost much more than such players cost today (and realizing that, in comparison, the current prices are a steal) or remembering that gas was once a dollar a gallon, which makes every trip to the gas station a painful experience. In all these cases the random, and not so random, anchors that we encountered along the way and were swayed by remain with us long after the initial decision itself.

NOW THAT WE know we behave like goslings, it is important to understand the process by which our first decisions translate into long-term habits. To illustrate this process, consider this example. You're walking past a restaurant, and you see two people standing in line, waiting to get in. "This must be a good restaurant," you think to yourself. "People are standing in line." So you stand behind these people. Another person walks by. He sees three people standing in line and thinks, "This must be a fantastic restaurant," and joins the line. Others join. We call this type of behavior herding. It happens when we assume that something is good (or bad) on the basis of other people's previous behavior, and our own actions follow suit.

But there's also another kind of herding, one that we call self-herding. This happens when we believe something is good (or bad) on the basis of our own previous behavior. Essentially, once we become the first person in line at the restaurant, we begin to line up behind ourself in subsequent experiences. Does that make sense? Let me explain.

Recall your first introduction to Starbucks, perhaps several years ago. (I assume that nearly everyone has had this experience, since Starbucks sits on every corner in America.) You are sleepy and in desperate need of a liquid energy boost as you embark on an errand one afternoon. You glance through the windows at Starbucks and walk in. The prices of the coffee are a shock—you've been blissfully drinking the brew at Dunkin' Donuts for years. But since you have walked in and are now curious about what coffee at this price might taste like, you surprise yourself: you buy a small coffee, enjoy its taste and its effect on you, and walk out.

The following week you walk by Starbucks again. Should you go in? The ideal decision-making process should take into account the quality of the coffee (Starbucks versus Dunkin' Donuts); the prices at the two places; and, of course, the cost (or value) of walking a few more blocks to get to Dunkin' Donuts. This is a complex computation—so instead, you resort to the simple approach: "I went to Starbucks before, and I enjoyed myself and the coffee, so this must be a good decision for me." So you walk in and get another small cup of coffee.

In doing so, you just became the second person in line, standing behind yourself. A few days later, you again walk by Starbucks and this time, you vividly remember your past decisions and act on them again—voilà! You become the third person in line, standing behind yourself. As the weeks pass, you enter again and again and every time, you feel more strongly that you are acting on the basis of your preferences. Buying coffee at Starbucks has become a habit with you.

BUT THE STORY doesn't end there. Now that you have gotten used to paying more

for coffee, and have bumped yourself up onto a new curve of consumption, other changes also become simpler. Perhaps you will now move up from the small cup for $2.20 to the medium size for $3.50 or to the Venti for $4.15. Even though you don't know how you got into this price bracket in the first place, moving to a larger coffee at a relatively greater price seems pretty logical. So is a lateral move to other offerings at Starbucks: Caffè Americano, Caffè Misto, Macchiato, and Frappuccino, for instance.

If you stopped to think about this, it would not be clear whether you should be spending all this money on coffee at Starbucks instead of getting cheaper coffee at Dunkin' Donuts or even free coffee at the office. But you don't think about these trade-offs anymore. You've already made this decision many times in the past, so you now assume that this is the way you want to spend your money. You've herded yourself—lining up behind your initial experience at Starbucks—and now you're part of the crowd.

HOWEVER, THERE IS something odd in this story. If anchoring is based on our initial decisions, how did Starbucks manage to become an initial decision in the first place? In other words, if we were previously anchored to the prices at Dunkin' Donuts, how did we move our anchor to Starbucks? This is where it gets really interesting.

When Howard Shultz created Starbucks, he was as intuitive a businessman as Salvador Assael. He worked diligently to separate Starbucks from other coffee shops, not through price but through ambience. Accordingly, he designed Starbucks from the very beginning to feel like a continental coffeehouse.

The early shops were fragrant with the smell of roasted beans (and better-quality roasted beans than those at Dunkin' Donuts). They sold fancy French coffee presses. The showcases presented alluring snacks—almond croissants, biscotti, raspberry custard pastries, and others. Whereas Dunkin' Donuts had small, medium, and large coffees, Starbucks offered Short, Tall, Grande, and Venti, as well as drinks with high-pedigree names like Caffè Americano, Caffè Misto, Macchiato, and Frappuccino. Starbucks did everything in its power, in other words, to make the experience feel different—so different that we would not use the prices at Dunkin' Donuts as an anchor, but instead would be open to the new anchor that Starbucks was preparing for us. And that, to a great extent, is how Starbucks succeeded.

GEORGE, DRAZEN, AND I were so excited with the experiments on coherent arbitrariness that we decided to push the idea one step farther. This time, we had a different twist to explore.

Do you remember the famous episode in *The Adventures of Tom Sawyer*, the one in which Tom turned the whitewashing of Aunt Polly's fence into an exercise in manipulating his friends? As I'm sure you recall, Tom applied the paint with gusto, pretending to enjoy the job. "Do you call this work?" Tom told his friends. "Does a boy get a chance to whitewash a fence every day?" Armed with this new "information," his friends discovered the joys of whitewashing a fence. Before long, Tom's friends were not only paying him for the privilege, but deriving real

pleasure from the task—a win-win outcome if there ever was one.

From our perspective, Tom transformed a negative experience to a positive one—he transformed a situation in which compensation was required to one in which people (Tom's friends) would pay to get in on the fun. Could we do the same? We thought we'd give it a try.

One day, to the surprise of my students, I opened the day's lecture on managerial psychology with a poetry selection, a few lines of "Whoever you are holding me now in hand" from Walt Whitman's *Leaves of Grass*:

> *Whoever you are holding me now in hand,*
> *Without one thing all will be useless,*
> *I give you fair warning before you attempt me further,*
> *I am not what you supposed, but far different.*
> *Who is he that would become my follower?*
> *Who would sign himself a candidate for my affections?*
> *The way is suspicious, the result uncertain, perhaps destructive,*
> *You would have to give up all else, I alone would expect to be your sole and exclusive standard,*
> *Your novitiate would even then be long and exhausting,*
> *The whole past theory of your life and all conformity to the lives around you would have to be abandon'd,*
> *Therefore release me now before troubling yourself any further, let go your hand from my shoulders,*
> *Put me down and depart on your way.*

After closing the book, I told the students that I would be conducting three readings from Walt Whitman's *Leaves of Grass* that Friday evening: one short, one medium, and one long. Owing to limited space, I told them, I had decided to hold an auction to determine who could attend. I passed out sheets of paper so that they could bid for a space; but before they did so, I had a question to ask them.

I asked half the students to write down whether, hypothetically, they would be willing to pay me $10 for a 10-minute poetry recitation. I asked the other half to write down whether, hypothetically, they would be willing to listen to me recite poetry for ten minutes if I paid them $10.

This, of course, served as the anchor. Now I asked the students to bid for a spot at my poetry reading. Do you think the initial anchor influenced the ensuing bids?

Before I tell you, consider two things. First, my skills at reading poetry are not of the first order. So asking someone to pay me for 10 minutes of it could be considered a stretch. Second, even though I asked half of the students if they would pay me for the privilege of attending the recitation, they didn't have to bid that way. They could have turned the tables completely and demanded that I pay them.

And now to the results (drumroll, please). Those who answered the hypothetical question about paying me were indeed willing to pay me for the privilege. They offered, on average, to pay me about a dollar for the short poetry reading, about two dollars for the medium poetry reading, and a bit more than three dollars for the long poetry reading. (Maybe I could make a living outside academe after all.)

But, what about those who were anchored to the thought of being paid

(rather than paying me)? As you might expect, they demanded payment: on average, they wanted $1.30 to listen to the short poetry reading, $2.70 to listen to the medium poetry reading, and $4.80 to endure the long poetry reading.

Much like Tom Sawyer, then, I was able to take an ambiguous experience (and if you could hear me recite poetry, you would understand just how ambiguous this experience is) and arbitrarily make it into a pleasurable or painful experience. Neither group of students knew whether my poetry reading was of the quality that is worth paying for or of the quality that is worth listening to only if one is being financially compensated for the experience (they did not know if it is pleasurable or painful). But once the first impression had been formed (that they would pay me or that I would pay them), the die was cast and the anchor set. Moreover, once the first decision had been made, other decisions followed in what seemed to be a logical and coherent manner. The students did not know whether listening to me recite poetry was a good or bad experience, but whatever their first decision was, they used it as input for their subsequent decisions and provided a coherent pattern of responses across the three poetry readings.

Of course, Mark Twain came to the same conclusions: "If Tom had been a great and wise philosopher, like the writer of this book, he would now have comprehended that work consists of whatever a body is obliged to do, and that play consists of whatever a body is not obliged to do." Mark Twain further observed: "There are wealthy gentlemen in England who drive four-horse passenger-coaches twenty or thirty miles on a daily line in the summer because the privilege costs them considerable money; but if they were offered wages for the service, that would turn it into work, and then they would resign."*

WHERE DO THESE thoughts lead us? For one, they illustrate the many choices we make, from the trivial to the profound, in which anchoring plays a role. We decide whether or not to purchase Big Macs, smoke, run red lights, take vacations in Patagonia, listen to Tchaikovsky, slave away at doctoral dissertations, marry, have children, live in the suburbs, vote Republican, and so on. According to economic theory, we base these decisions on our fundamental values—our likes and dislikes.

But what are the main lessons from these experiments about our lives in general? Could it be that the lives we have so carefully crafted are largely just a product of arbitrary coherence? Could it be that we made arbitrary decisions at some point in the past (like the goslings that adopted Lorenz as their parent) and have built our lives on them ever since, assuming that the original decisions were wise? Is that how we chose our careers, our spouses, the clothes we wear, and the way we style our hair? Were they smart decisions in the first place? Or were they partially random first imprints that have run wild?

Descartes said, *Cogito ergo sum*—"I think, therefore I am." But suppose we are nothing more than the sum of our first, naive, random behaviors. What then?

These questions may be tough nuts to crack, but in terms of our personal lives, we can actively improve on our irrational behaviors. We can start by becoming aware of our vulnerabilities. Suppose you're planning to buy a cutting-edge cell phone (the one with the three-megapixel, 8× zoom digital camera), or even a daily $4 cup of gourmet coffee. You might begin by questioning that habit.

How did it begin? Second, ask yourself what amount of pleasure you will be getting out of it. Is the pleasure as much as you thought you would get? Could you cut back a little and better spend the remaining money on something else? With everything you do, in fact, you should train yourself to question your repeated behaviors. In the case of the cell phone, could you take a step back from the cutting edge, reduce your outlay, and use some of the money for something else? And as for the coffee—rather than asking which blend of coffee you will have today, ask yourself whether you should even be having that habitual cup of expensive coffee at all.*

We should also pay particular attention to the first decision we make in what is going to be a long stream of decisions (about clothing, food, etc.). When we face such a decision, it might seem to us that this is just one decision, without large consequences; but in fact the power of the first decision can have such a long-lasting effect that it will percolate into our future decisions for years to come. Given this effect, the first decision is crucial, and we should give it an appropriate amount of attention.

Socrates said that the unexamined life is not worth living. Perhaps it's time to inventory the imprints and anchors in our own life. Even if they once were completely reasonable, are they still reasonable? Once the old choices are reconsidered, we can open ourselves to new decisions—and the new opportunities of a new day. That seems to make sense.

ALL THIS TALK about anchors and goslings has larger implications than consumer preferences, however. Traditional economics assumes that prices of products in the market are determined by a balance between two forces: production at each price (supply) and the desires of those with purchasing power at each price (demand). The price at which these two forces meet determines the prices in the marketplace.

This is an elegant idea, but it depends centrally on the assumption that the two forces are independent and that together they produce the market price. The results of all the experiments presented in this chapter (and the basic idea of arbitrary coherence itself) challenge these assumptions. First, according to the standard economic framework, consumers' willingness to pay is one of the two inputs that determine market prices (this is the demand). But as our experiments demonstrate, what consumers are willing to pay can easily be manipulated, and this means that consumers don't in fact have a good handle on their own preferences and the prices they are willing to pay for different goods and experiences.

Second, whereas the standard economic framework assumes that the forces of supply and demand are independent, the type of anchoring manipulations we have shown here suggest that they are, in fact, dependent. In the real world, anchoring comes from manufacturer's suggested retail prices (MSRPs), advertised prices, promotions, product introductions, etc.—all of which are supply-side variables. It seems then that instead of consumers' willingness to pay influencing market prices, the causality is somewhat reversed and it is market prices themselves that influence consumers' willingness to pay. What this means is that demand is not, in fact, a completely separate force from supply.

AND THIS IS not the end of the story. In the framework of arbitrary coherence, the relationships we see in the marketplace between demand and supply (for example, buying more yogurt when it is discounted) are based not on preferences but on memory. Here is an illustration of this idea. Consider your current consumption of milk and wine. Now imagine that two new taxes will be introduced tomorrow. One will cut the price of wine by 50 percent, and the other will increase the price of milk by 100 percent. What do you think will happen? These price changes will surely affect consumption, and many people will walk around slightly happier and with less calcium. But now imagine this. What if the new taxes are accompanied by induced amnesia for the previous prices of wine and milk? What if the prices change in the same way, but you do not remember what you paid for these two products in the past?

I suspect that the price changes would make a huge impact on demand if people remembered the previous prices and noticed the price increases; but I also suspect that without a memory for past prices, these price changes would have a trivial effect, if any, on demand. If people had no memory of past prices, the consumption of milk and wine would remain essentially the same, as if the prices had not changed. In other words, the sensitivity we show to price changes might in fact be largely a result of our memory for the prices we have paid in the past and our desire for coherence with our past decisions—not at all a reflection of our true preferences or our level of demand.

The same basic principle would also apply if the government one day decided to impose a tax that doubled the price of gasoline. Under conventional economic theory, this should cut demand. But would it? Certainly, people would initially compare the new prices with their anchor, would be flabbergasted by the new prices, and so might pull back on their gasoline consumption and maybe even get a hybrid car. But over the long run, and once consumers readjusted to the new price and the new anchors (just as we adjust to the price of Nike sneakers, bottled water, and everything else), our gasoline consumption, at the new price, might in fact get close to the pretax level. Moreover, much as in the example of Starbucks, this process of readjustment could be accelerated if the price change were to also be accompanied by other changes, such as a new grade of gas, or a new type of fuel (such as corn-based ethanol fuel).

I am not suggesting that doubling the price of gasoline would have no effect on consumers' demand. But I do believe that in the long term, it would have a much smaller influence on demand than would be assumed from just observing the short-term market reactions to price increases.

ANOTHER IMPLICATION OF arbitrary coherence has to do with the claimed benefits of the free market and free trade. The basic idea of the free market is that if I have something that you value more than I do—let's say a sofa—trading this item will benefit both of us. This means that the mutual benefit of trading rests on the assumption that all the players in the market know the value of what they have and the value of the things they are considering getting from the trade.

But if our choices are often affected by random initial anchors, as we observed in our experiments, the choices and trades we make are not necessarily going to be an accurate reflection of the real pleasure or utility we derive from

those products. In other words, in many cases we make decisions in the marketplace that may not reflect how much pleasure we can get from different items. Now, if we can't accurately compute these pleasure values, but frequently follow arbitrary anchors instead, then it is not clear that the opportunity to trade is necessarily going to make us better off. For example, because of some unfortunate initial anchors we might mistakenly trade something that truly gives us a lot of pleasure (but regrettably had a low initial anchor) for something that gives us less pleasure (but owing to some random circumstances had a high initial anchor). If anchors and memories of these anchors—but not preferences—determine our behavior, why would trading be hailed as the key to maximizing personal happiness (utility)?

SO, WHERE DOES this leave us? If we can't rely on the market forces of supply and demand to set optimal market prices, and we can't count on free-market mechanisms to help us maximize our utility, then we may need to look elsewhere. This is especially the case with society's essentials, such as health care, medicine, water, electricity, education, and other critical resources. If you accept the premise that market forces and free markets will not always regulate the market for the best, then you may find yourself among those who believe that the government (we hope a reasonable and thoughtful government) must play a larger role in regulating some market activities, even if this limits free enterprise. Yes, a free market based on supply, demand, and no friction would be the ideal if we were truly rational. Yet when we are not rational but irrational, policies should take this important factor into account.

Reflections on the Existence of Well-Defined Preferences

One of the lessons from Chapter 2 was that we generally believe we have precise and well-articulated preferences, but in reality, we only *think* that we know what we want. Here's an example of an experience where I went into a situation with one set of ideas about what I wanted and emerged with a very different understanding.

When I turned 30, I decided it was time to trade in my motorcycle for a car, but I could not decide which car was right for me. The Web was just taking off, and to my delight, I found a site that provided advice on purchasing cars. The Web site, which is now defunct, asked a series of questions ranging from my preferred safety rating to my desired braking distance, my ideal turning radius, the number of passengers I'd like to be able to bring along, and, of course, my price range.

I spent fifteen minutes answering these questions. At the top of each page, I watched the progress bar inch closer to my result. It was exciting—I was really interested in seeing what kind of recommendation the site would come up with. The final screen displayed all the answers I had provided in the last fifteen minutes; all I had to do was click on "Submit" to receive my tailored recommendation. The second I did, I learned that my perfect car was (drum roll, please) a Ford Taurus.

What?

Now, I might not know much about cars (in truth, I know very little about

them), but I knew that I did not want a Ford Taurus (and I don't mean any disrespect to what I am sure is generally a fine automobile). The problem was that, having just surrendered my motorcycle, I couldn't see myself driving such a sedate sedan. I was now facing a dilemma: I had tried a deliberative and thoughtful process for my car selection, and I didn't like the answer I got. So, I did what I think anyone in my position would do. I hit the back button a few times, backtracked to earlier stages of the interview process, and changed many of my original answers to what I convinced myself were more accurate and appropriate responses. I lowered my interest in safety and the number of passengers I wanted to take with me, and changed many of my answers to fit what I deemed a more appropriate motorcycle replacement. From time to time, I checked to see how the different responses translated into different recommendations.

I kept this up until the car-advising Web site suggested a Mazda Miata. The moment the program was kind enough to recommend a small convertible, I felt grateful for the fantastic software and decided to follow its advice. A few weeks later, I became the proud owner of a Miata, which served me loyally for many years.

WHAT HAPPENED HERE? On one hand, I knew that buying a car was no trivial matter, and I wanted to approach such a large decision by carefully weighing the cost and benefits in a cold, calculated, and sensible way. At the same time, I knew I was making an important and symbolic move into adulthood, and I understood that kids and the inevitable minivan (which I drive these days) were awaiting me. Nevertheless, my brain and my heart were engaged in a practical tug-of-war. Deep down, what I really wanted was a car that felt closer to a motorcycle—something that was fun to drive.

Taking the systematic and calculated approach to solving this problem did not yield the "correct" answer, so I went back and fudged around with my responses, letting the computerized method rationalize my choice for me. This way, I ended up with a decision that made me happy, and at the same time, it was a decision that I could easily explain to myself. With a neat and programmed computerized process, it was now obvious why the small convertible was, in fact, the right choice for me.

This elaborate computerized justification process might seem artificial and extreme, but I suspect that the same basic elements end up playing out in many of our important decisions. This experience taught me that sometimes we want our decisions to have a rational veneer when, in fact, they stem from a gut feeling—what we crave deep down. I suspect that in our attempts to make sure that we end up with decisions that seem well-reasoned and thoughtful, we commonly undergo a lot of unnecessary mental gymnastics and justifications, particularly when the choices are large and significant. Sometimes these rationalizations are complex and time-consuming, and sometimes we have the benefit of a software program to help us with more efficient rationalization. Perhaps this was the real function of the Web site I used—it was not necessarily designed to help me make a better decision, but to help me justify my choice and feel confident about it.

In the end, following our gut feelings and rationalizing them after the fact is not always bad. It can sometimes lead us to pick a satisfactory outcome or, at the

very least, prevent us from ending up with a car we really don't want.

CHAPTER 3

The Cost of Zero Cost

Why We Often Pay Too Much When We Pay Nothing

Have you ever grabbed for a coupon offering a FREE! package of coffee beans—even though you don't drink coffee and don't even have a machine with which to brew it? What about all those FREE! extra helpings you piled on your plate at a buffet, even though your stomach had already started to ache from all the food you had consumed? And what about the worthless FREE! stuff you've accumulated—the promotional T-shirt from the radio station, the teddy bear that came with the box of Valentine chocolates, the magnetic calendar your insurance agent sends you each year?

It's no secret that getting something free feels very good. Zero is not just another price, it turns out. Zero is an emotional hot button—a source of irrational excitement. Would you buy something if it were discounted from 50 cents to 20 cents? Maybe. Would you buy it if it were discounted from 50 cents to two cents? Maybe. Would you grab it if it were discounted from 50 cents to zero? You bet!

What is it about zero cost that we find so irresistible? Why does FREE! make us so happy? After all, FREE! can lead us into trouble: things that we would never consider purchasing become incredibly appealing as soon as they are FREE! For instance, have you ever gathered up free pencils, key chains, and notepads at a conference, even though you'd have to carry them home and would only throw most of them away? Have you ever stood in line for a very long time (too long), just to get a free cone of Ben and Jerry's ice cream? Or have you bought two of a product that you wouldn't have chosen in the first place, just to get the third one for free?

ZERO HAS HAD a long history. The Babylonians invented the concept of zero; the ancient Greeks debated it in lofty terms (how could something be nothing?); the ancient Indian scholar Pingala paired zero with the numeral 1 to get double digits; and both the Mayans and the Romans made zero part of their numeral systems. But zero really found its place about AD 498, when the Indian astronomer Aryabhata sat up in bed one morning and exclaimed, *"Sthanam sthanam dasa gunam"*—which translates, roughly, as "Place to place in 10 times in value." With that, the idea of decimal-based place-value notation was born. Now zero was on a roll: It spread to the Arab world, where it flourished; crossed the Iberian Peninsula to Europe (thanks to the Spanish Moors); got some tweaking from the Italians; and eventually sailed the Atlantic to the New World, where zero ultimately found plenty of employment (together with the digit 1) in a place called Silicon Valley.

So much for a brief recounting of the history of zero. But the concept of zero

applied to money is less clearly understood. In fact, I don't think it even has a history. Nonetheless, FREE! has huge implications, extending not only to discount prices and promotions, but also to how FREE! can be used to help us make decisions that would benefit ourselves and society.

If FREE! were a virus or a subatomic particle, I might use an electron microscope to probe the object under the lens, stain it with different compounds to reveal its nature, or somehow slice it apart to reveal its inner composition. In behavioral economics we use a different instrument, however, one that allows us to slow down human behavior and examine it frame by frame, as it unfolds. As you have undoubtedly guessed by now, this procedure is called an experiment.

IN ONE EXPERIMENT, Kristina Shampanier (a PhD student at MIT), Nina Mazar (a professor at the University of Toronto), and I went into the chocolate business. Well, sort of. We set up a table at a large public building and offered two kinds of chocolates—Lindt truffles and Hershey's Kisses. There was a large sign above our table that read, "One chocolate per customer." Once the potential customers stepped closer, they could see the two types of chocolate and their prices.*

For those of you who are not chocolate connoisseurs, Lindt is produced by a Swiss firm that has been blending fine cocoas for 160 years. Lindt's chocolate truffles are particularly prized—exquisitely creamy and just about irresistible. They cost about 30 cents each when we buy them in bulk. Hershey's Kisses, on the other hand, are good little chocolates, but let's face it, they are rather ordinary: Hershey cranks out 80 million Kisses a day. In Hershey, Pennsylvania, even the streetlamps are made in the shape of the ubiquitous Hershey's Kiss.

So what happened when the "customers" flocked to our table? When we set the price of a Lindt truffle at 15 cents and a Kiss at one cent, we were not surprised to find that our customers acted with a good deal of rationality: they compared the price and quality of the Kiss with the price and quality of the truffle, and then made their choice. About 73 percent of them chose the truffle and 27 percent chose a Kiss.

Now we decided to see how FREE! might change the situation. So we offered the Lindt truffle for 14 cents and the Kisses free. Would there be a difference? Should there be? After all, we had merely lowered the price of both kinds of chocolate by one cent.

But what a difference FREE! made. The humble Hershey's Kiss became a big favorite. Some 69 percent of our customers (up from 27 percent before) chose the FREE! Kiss, giving up the opportunity to get the Lindt truffle for a very good price. Meanwhile, the Lindt truffle took a tumble; customers choosing it decreased from 73 to 31 percent.

What was going on here? First of all, let me say that there are many times when getting FREE! items can make perfect sense. If you find a bin of free athletic socks at a department store, for instance, there's no downside to grabbing all the socks you can. The critical issue arises when FREE! becomes a struggle between a free item and another item—a struggle in which the presence of FREE! leads us to make a bad decision. For instance, imagine going to a sports store to buy a pair of white socks, the kind with a nicely padded heel and a gold toe. Fifteen minutes

later you're leaving the store, not with the socks you came in for, but with a cheaper pair that you don't like at all (without a padded heel and gold toe) but that came in a package with a FREE! second pair. This is a case in which you gave up a better deal and settled for something that was not what you wanted, just because you were lured by the FREE!

To replicate this experience in our chocolate experiment, we told our customers that they could choose only a single sweet—the Kiss or the truffle. It was an either-or decision, like choosing one kind of athletic sock over another. That's what made the customers' reaction to the FREE! Kiss so dramatic: Both chocolates were discounted by the same amount of money. The relative price difference between the two was unchanged—and so was the expected pleasure from both.

According to standard economic theory (simple cost-benefit analysis), then, the price reduction should not lead to any change in the behavior of our customers. Before, about 27 percent chose the Kiss and 73 percent chose the truffle. And since nothing had changed in relative terms, the response to the price reduction should have been exactly the same. A passing economist, twirling his cane and espousing conventional economic theory, in fact, would have said that since everything in the situation was the same, our customers should have chosen the truffles by the same margin of preference.*

And yet here we were, with people pressing up to the table to grab our Hershey's Kisses, not because they had made a reasoned cost-benefit analysis before elbowing their way in, but simply because the Kisses were FREE! How strange (but predictable) we humans are!

THIS CONCLUSION, INCIDENTALLY, remained the same in other experiments as well. In one case we priced the Hershey's Kiss at two cents, one cent, and zero cents, while pricing the truffle correspondingly at 27 cents, 26 cents, and 25 cents. We did this to see if discounting the Kiss from two cents to one cent and the truffle from 27 cents to 26 cents would make a difference in the proportion of buyers for each. It didn't. But, once again, when we lowered the price of the Kiss to free, the reaction was dramatic. The shoppers overwhelmingly demanded the Kisses.

We decided that perhaps the experiment had been tainted, since shoppers may not feel like searching for change in a purse or backpack, or they may not have any money on them. Such an effect would artificially make the free offer seem more attractive. To address this possibility, we ran other experiments at one of MIT's cafeterias. In this setup, the chocolates were displayed next to the cashier as one of the cafeteria's regular promotions and the students who were interested in the chocolates simply added them to the lunch purchase, and paid for them while going through the cashier's line. What happened? The students still went overwhelmingly for the FREE! option.

WHAT IS IT about FREE! that's so enticing? Why do we have an irrational urge to jump for a FREE! item, even when it's not what we really want?

I believe the answer is this. Most transactions have an upside and a downside, but when something is FREE! we forget the downside. FREE! gives us

such an emotional charge that we perceive what is being offered as immensely more valuable than it really is. Why? I think it's because humans are intrinsically afraid of loss. The real allure of FREE! is tied to this fear. There's no visible possibility of loss when we choose a FREE! item (it's free). But suppose we choose the item that's *not* free. Uh-oh, now there's a risk of having made a poor decision —the possibility of a loss. And so, given the choice, we go for what is free.

For this reason, in the land of pricing, zero is not just another price. Sure, 10 cents can make a huge difference in demand (suppose you were selling millions of barrels of oil), but nothing beats the emotional surge of FREE! This, the *zero price effect*, is in a category all its own.

To be sure, "buying something for nothing" is a bit of an oxymoron. But let me give you an example of how we often fall into the trap of buying something we may not want, simply because of that sticky substance, FREE!

In 2007, I saw a newspaper ad from a major electronics maker, offering me seven FREE! DVD titles if I purchased the maker's new high-definition DVD player. First of all, did I need a high-definition player at that time? Probably not. But even if I had, wouldn't it have been wiser to wait for prices to descend? They always do—and today's $600 high-definition DVD player will very quickly be tomorrow's $200 machine. Second, the DVD maker had a clear agenda behind its offer. This company's high-definition DVD system was in cutthroat competition with Blu-Ray, a system backed by many other manufacturers. At the time, Blu-Ray was ahead and has since gone on to dominate the market. So how much is FREE! when the machine being offered will find its way into obsolescence (like Betamax VCRs)? Those are two rational thoughts that might prevent us from falling under the spell of FREE! But, gee, those FREE! DVDs certainly look good!

GETTING SOMETHING FREE! is certainly a draw when we talk about prices. But what would happen if the offer was not a free price, but a free exchange? Are we as susceptible to free products as we are to getting products for free? A few years ago, with Halloween drawing near, I had an idea for an experiment to probe that question. This time I wouldn't even have to leave my home to get my answers.

Early in the evening, Joey, a nine-year-old kid dressed as Spider-Man and carrying a large yellow bag, climbed the stairs of our front porch. His mother accompanied him, to ensure that no one gave her kid an apple with a razor blade inside. (By the way, there never was a case of razor blades being distributed in apples on Halloween; it is just an urban myth.) She stayed on the sidewalk, however, to give Joey the feeling that he was trick-or-treating by himself.

After the traditional query, "Trick or treat?" I asked Joey to hold open his right hand. I placed three Hershey's Kisses in his palm and asked him to hold them there for a moment. "You can also get one of these two Snickers bars," I said, showing him a small one and a large one. "In fact, if you give me one of those Hershey's Kisses I will give you this smaller Snickers bar. And if you give me two of your Hershey's Kisses, I will give you this larger Snickers bar."

Now a kid may dress up like a giant spider, but that doesn't mean he's stupid. The small Snickers bar weighed one ounce, and the large Snickers bar weighed two ounces. All Joey had to do was give me one additional Hershey's

Kiss (about 0.16 ounce) and he would get an extra ounce of Snickers. This deal might have stumped a rocket scientist, but for a nine-year-old boy, the computation was easy: he'd get more than six times the return on investment (in the net weight of chocolate) if he went for the larger Snickers bar. In a flash Joey put two of his Kisses into my hand, took the two-ounce Snickers bar, and dropped it into his bag.

Joey wasn't alone in making this snap decision. All but one of the kids to whom I presented this offer traded in two Kisses for the bigger candy bars.

Zoe was the next kid to walk down the street. She was dressed as a princess, in a long white dress, with a magic wand in one hand and an orange Halloween pumpkin bucket in the other. Her younger sister was resting comfortably in their father's arms, looking cute and cuddly in her bunny outfit. As they approached, Zoe called out, in a high, cute voice, "Trick or treat!" In the past I admit that I have sometimes devilishly replied, "Trick!" Most kids stand there, baffled, having never thought through their question to see that it allowed an alternative answer.

In this case I gave Zoe her treat—three Hershey's Kisses. But I did have a trick up my sleeve. I offered little Zoe a deal: a choice between getting a large Snickers bar in exchange for one of her Hershey's Kisses, or getting the small Snickers bar for FREE! without giving up any Hershey's Kisses.

Now, a bit of rational calculation (which in Joey's case was amply demonstrated) would show that the best deal is to forgo the free small Snickers bar, pay the cost of one additional Hershey's Kiss, and go for the large Snickers bar. On an ounce-for-ounce comparison, it was far better to give up one additional Hershey's Kiss and get the larger Snickers bar (two ounces) instead of a smaller Snickers bar (one ounce). This logic was perfectly clear to Joe and the kids who encountered the condition in which both Snickers bars had a cost. But what would Zoe do? Would her clever kid's mind make that rational choice—or would the fact that the small Snickers bar was FREE! blind her to the rationally correct answer?

As you might have guessed by now, Zoe, and the other kids to whom I offered the same deal, was completely blinded by FREE! About 70 percent of them gave up the better deal, and took the worse deal just because it was FREE!

Just in case you think Kristina, Nina, and I make a habit of picking on kids, I'll mention that we repeated the experiment with bigger kids, in fact students at the MIT student center. The results replicated the pattern we saw on Halloween. Indeed, the draw of zero cost is not limited to monetary transactions. Whether it's products or money, we just can't resist the gravitational pull of FREE!

SO DO YOU think you have a handle on FREE!?

OK. Here's a quiz. Suppose I offered you a choice between a free $10 Amazon gift certificate and a $20 gift certificate for seven dollars. Think quickly. Which would you take?

If you jumped for the FREE! certificate, you would have been like most of the people we tested at one of the malls in Boston. But look again: a $20 gift certificate for seven dollars delivers a $13 profit. That's clearly better than getting a $10 certificate free (earning $10). Can you see the irrational behavior in action?

*

LET ME TELL you a story that describes the real influence of FREE! on our behavior. A few years ago, Amazon.com started offering free shipping of orders over a certain amount. Someone who purchased a single book for $16.95 might pay an additional $3.95 for shipping, for instance. But if the customer bought another book, for a total of $31.90, they would get their shipping FREE!

Some of the purchasers probably didn't want the second book (and I am talking here from personal experience) but the FREE! shipping was so tempting that to get it, they were willing to pay the cost of the extra book. The people at Amazon were very happy with this offer, but they noticed that in one place—France—there was no increase in sales. Is the French consumer more rational than the rest of us? Unlikely. Rather, it turned out, the French customers were reacting to a different deal.

Here's what happened. Instead of offering FREE! shipping on orders over a certain amount, the French division priced the shipping for those orders at one franc. Just one franc—about 20 cents. This doesn't seem very different from FREE! but it was. In fact, when Amazon changed the promotion in France to include free shipping, France joined all the other countries in a dramatic sales increase. In other words, whereas shipping for one franc—a real bargain—was virtually ignored by the French, FREE! shipping caused an enthusiastic response.

America Online (AOL) had a similar experience several years ago when it switched from pay-per-hour service to a monthly payment schedule (in which you could log in as many hours as you wanted for a fixed $19.95 per month). In preparation for the new price structure, AOL geared up for what it estimated would be a small increase in demand. What did it get? An overnight increase from 140,000 to 236,000 customers logging into the system, and a doubling of the average time online. That may seem good—but it wasn't good. AOL's customers encountered busy phone lines, and soon AOL was forced to lease services from other online providers (who were only too happy to sell bandwidth to AOL—at the premium of snow shovels in a snowstorm). What Bob Pittman (the president of AOL at the time) didn't realize was that consumers would respond to the allure of FREE! like starving people at a buffet.

WHEN CHOOSING BETWEEN two products, then, we often overreact to the free one. We might opt for a FREE! checking account (with no benefits attached) rather than one that costs five dollars a month. But if the five-dollar checking account includes free traveler's checks, online billing, etc., and the FREE! one doesn't, we may end up spending more for this package of services with the FREE! account than with the five-dollar account. Similarly, we might choose a mortgage with no closing costs, but with interest rates and fees that are off the wall; and we might get a product we don't really want simply because it comes with a free gift.

My most recent personal encounter with this involved a car. When I was looking for a new car a few years ago, I knew that I really should buy a minivan. In fact, I had read up on Honda minivans and knew all about them. But then an Audi caught my eye, at first through an appealing offer—FREE! oil changes for the

next three years. How could I resist?

To be perfectly honest, the Audi was sporty and red, and I was still resisting the idea of being a mature and responsible father to two young kids. It wasn't as if the free oil change completely swayed me, but its influence on me was, from a rational perspective, unjustifiably large. Just because it was FREE! it served as an additional allure that I could cling to.

So I bought the Audi—and the FREE! oil. (A few months later, while I was driving on a highway, the transmission broke—but that is a different story.) Of course, with a cooler head I might have made a more rational calculation. I drive about 7,000 miles a year; the oil needs to be changed every 10,000 miles; and the cost per change is about $75. Over three years, then, I would save about $150, or about 0.5 percent of the purchase price of the car—not a good reason to base my decision on. It gets worse, though: now I have an Audi that is packed to the ceiling with action figures, a stroller, a bike, and other kids' paraphernalia. Oh, for a minivan.

THE CONCEPT OF zero also applies to time. Time spent on one activity, after all, is time taken away from another. So if we spend 45 minutes in a line waiting for our turn to get a FREE! taste of ice cream, or if we spend half an hour filling out a long form for a tiny rebate, there is something else that we are not doing with our time.

My favorite personal example is free-entrance day at a museum. Despite the fact that most museums are not very expensive, I find it much more appealing to satisfy my desire for art when the price is zero. Of course I am not alone in this desire. So on these days I usually find that the museum is overcrowded, the line is long, it is hard to see anything, and fighting the crowds around the museum and in the cafeteria is unpleasant. Do I realize that it is a mistake to go to a museum when it is free? You bet I do—but I go nevertheless.

ZERO MAY ALSO affect food purchases. Food manufacturers have to convey all kinds of information on the side of the box. They have to tell us about the calories, fat content, fiber, etc. Is it possible that the same attraction we have to zero price could also apply to zero calories, zero trans fats, zero carbs, etc.? If the same general rules apply, Pepsi will sell more cans if the label says "zero calories" than if it says "one calorie."

Suppose you are at a bar, enjoying a conversation with some friends. With one brand you get a calorie-free beer, and with another you get a three-calorie beer. Which brand will make you feel that you are drinking a really light beer? Even though the difference between the two beers is negligible, the zero-calorie beer will increase the feeling that you're doing the right thing, healthwise. You might even feel so good that you go ahead and order a plate of fries.

SO YOU CAN maintain the status quo with a 20-cent fee (as in the case of Amazon's shipping in France), or you can start a stampede by offering something FREE! Think how powerful that idea is! Zero is not just another discount. Zero is a different place. The difference between two cents and one cent is small. But the

difference between one cent and zero is huge!

If you are in business, and understand that, you can do some marvelous things. Want to draw a crowd? Make something FREE! Want to sell more products? Make part of the purchase FREE!

Similarly, we can use FREE! to drive social policy. Want people to drive electric cars? Don't just lower the registration and inspection fees—eliminate them, so that you have created FREE! In the same way, if health is your concern, focus on early detection as a way to eliminate the progression of severe illnesses. Want people to do the right thing—in terms of getting regular colonoscopies, mammograms, cholesterol checks, diabetes checks, and such? Don't just decrease the cost (by decreasing the co-pay). Make these critical procedures FREE!

I don't think most policy strategists realize that FREE! is an ace in their hand, let alone know how to play it. It's certainly counterintuitive, in these times of budget cutbacks, to make something FREE! But when we stop to think about it, FREE! can have a great deal of power, and it makes a lot of sense.

Reflections on the Price of FREE!

We learned from our experiments that we all get a bit too excited when something is FREE! and that consequently, we can make decisions that are not in our best interest.

For example, imagine that you were choosing between two credit cards: one that offers you a 12 percent APR but has no yearly fee (FREE!), and one that offers you a lower interest rate of 9 percent APR but charges you a $100 annual fee. Which one would you take? Most people would overemphasize the yearly fee and in pursuit of the FREE! offer would end up getting the card that costs them much more in the long run—when they inevitably miss a payment or carry a balance.*

Although identifying and fighting the allure of FREE! is important in order to avoid traps while we are making decisions, there are also some cases in which we can use FREE! to our advantage. Take, for example, the common experience of going to a restaurant with friends. When the server drops off the check at the end of a meal, people often scramble to figure out the norms for payment. Do we each pay for what we ordered? Do we split the bill evenly, even if John had that extra glass of wine and the crème brûlée? FREE! can help us solve this problem, and in the process help us get more joy from dining out with our friends.

The answer, as it turns out, is that one person should pay the entire bill, and that the people involved should take turns paying over time. Here is the logic: When we pay—regardless of the amount of money—we feel some psychological pain, which social scientists call the "pain of paying." This is the unpleasantness associated with giving up our hard-earned cash, regardless of the circumstances. It turns out that the pain of paying has two interesting features. First, and most obviously, when we pay nothing (for example, when someone else foots the bill) we don't feel any pain of paying. Second, and less obviously, the pain of paying is relatively insensitive to the amount that we pay. This means that we feel more pain of paying as the bill increases, but every additional dollar on the bill pains us less. (We call this "diminishing sensitivity." Analogously, if you add one pound to an empty backpack, it feels like a substantial increase in weight. But adding a pound to a backpack that's already laden with a laptop and some books does not

feel like a big difference.) This diminishing sensitivity to the pain of paying means that the first dollar we pay will cause us the highest pain, the second dollar will cause us less, and so on, until we feel just a tiny twinge for, say, the forty-seventh dollar.

So if we are dining with others, we are happiest when we pay nothing (FREE!); we are less happy when we have to pay something; and the additional dollars we fork over cause us a smaller and smaller additional amount of pain as the size of the bill increases. The logical conclusion is that one person should pay the whole bill.

If you're still unconvinced, consider the following example: Imagine that four people share a meal and the bill comes to $100. Now, if everyone at the table pays $25, every person would feel some pain of paying. In order to make this less abstract, let's assign "units" as a measure of this pain. We'll assume that paying $25 translates into 10 units of pain for a total of 40 units of pain for the whole table when it comes time to split the bill. But what if one person pays the entire bill? Since the pain of paying does not increase linearly with the amount of payment, the person who is paying will feel 10 units of pain for the first $25 that he or she pays; maybe 7 units for the next $25; 5 units for the next $25; and 4 units for the last $25. The total of 26 units of pain lowers the amount of pain for the entire table by 14 units. The general point is this: we all love getting our meals for nothing, and as long as we can alternate payers, we can enjoy many FREE! dinners and derive greater overall benefit from our friendships in the process.

"Aha," you might say, "but what about times when I eat only a green salad while my friend's husband orders a green salad, a filet mignon dinner, two glasses of the most expensive cabernet sauvignon, and a crème brûlée for dessert? Or when the number of people changes the next time we gather? Or when some people in the group leave town altogether? All of this leaves me holding the bag."

Certainly, there is no question that all these considerations make the "I'll buy this time, you buy next time" approach less economically efficient. Nevertheless, given the huge benefits in terms of the pain of paying that this method delivers, I personally would be willing to sacrifice a few bucks here and there to reduce the pain of paying for my friends and myself.

Appendix: Chapter 3

Let me explain how the logic of standard economic theory would apply to our setting. When a person can select one and only one of two chocolates, he needs to consider not the absolute value of each chocolate but its relative value—what he gets and what he gives up. As a first step the rational consumer needs to compute the relative net benefits of the two chocolates (the value of the expected taste minus the cost), and make a decision based on which chocolate has the larger net benefit. How would this look when the cost of the Lindt truffle was 15 cents and the cost of the Hershey's Kiss was one cent? The rational consumer would estimate the amount of pleasure he expects to get from the truffle and the Kiss (let's say this is 50 pleasure units and five pleasure units, respectively) and subtract the displeasure he would get from paying 15 cents and one cent (let's say this is 15 displeasure units and one displeasure unit, respectively). This would give him a total expected pleasure of 35 pleasure units (50 – 15) for the truffle,

and a total expected pleasure of four pleasure units (5 - 1) for the Kiss. The truffle leads by 31 points, so it's an easy choice—the truffle wins hands down.

What about the case when the cost is reduced by the same amount for both products? (Truffles cost 14 cents and the Kiss is free.) The same logic applies. The taste of the chocolates has not changed, so the rational consumer would estimate the pleasure to be 50 and five pleasure units, respectively. What has changed is the displeasure. In this setting the rational consumer would have a lower level of displeasure for both chocolates because the prices have been reduced by one cent (and one displeasure unit). Here is the main point: because both products were discounted by the same amount, their relative difference would be unchanged. The total expected pleasure for the truffle would now be 36 pleasure units (50 - 14), and the total expected pleasure for the Kiss would now be five pleasure units (5 - 0). The truffle leads by the same 31 points, so it should be the same easy choice. The truffle wins hands down.

This is how the pattern of choice *should* look, if the only forces at play were those of a rational cost-benefit analysis. The fact that the results from our experiments are so different tells us loud and clear that something else is going on, and that the price of zero plays a unique role in our decisions.

CHAPTER 4

The Cost of Social Norms

Why We Are Happy to Do Things, but Not
When We Are Paid to Do Them

You are at your mother-in-law's house for Thanksgiving dinner, and what a sumptuous spread she has put on the table for you! The turkey is roasted to a golden brown; the stuffing is homemade and exactly the way you like it. Your kids are delighted: the sweet potatoes are crowned with marshmallows. And your wife is flattered: her favorite recipe for pumpkin pie has been chosen for dessert.

The festivities continue into the late afternoon. You loosen your belt and sip a glass of wine. Gazing fondly across the table at your mother-in-law, you rise to your feet and pull out your wallet. "Mom, for all the love you've put into this, how much do I owe you?" you say sincerely. As silence descends on the gathering, you wave a handful of bills. "Do you think three hundred dollars will do it? No, wait, I should give you four hundred!"

This is not a picture that Norman Rockwell would have painted. A glass of wine falls over; your mother-in-law stands up red-faced; your sister-in-law shoots you an angry look; and your niece bursts into tears. Next year's Thanksgiving celebration, it seems, may be a frozen dinner in front of the television set.

WHAT'S GOING ON here? Why does an offer for direct payment put such a damper on the party? As Margaret Clark, Judson Mills, and Alan Fiske suggested a long time ago, the answer is that we live simultaneously in two different worlds—one where social norms prevail, and the other where market norms make the rules. The social norms include the friendly requests that people make of one another. Could you help me move this couch? Could you help me change this tire? Social norms are wrapped up in our social nature and our need for community. They are usually warm and fuzzy. Instant paybacks are not required: you may help move your neighbor's couch, but this doesn't mean he has to come right over and move yours. It's like opening a door for someone: it provides pleasure for both of you, and reciprocity is not immediately required.

The second world, the one governed by market norms, is very different. There's nothing warm and fuzzy about it. The exchanges are sharp-edged: wages, prices, rents, interest, and costs-and-benefits. Such market relationships are not necessarily evil or mean—in fact, they also include self-reliance, inventiveness, and individualism—but they do imply comparable benefits and prompt payments. When you are in the domain of market norms, you get what you pay for—that's just the way it is.

When we keep social norms and market norms on their separate paths, life hums along pretty well. Take sex, for instance. We may have it free in the social context, where it is, we hope, warm and emotionally nourishing. But there's also

market sex, sex that is on demand and that costs money. This seems pretty straightforward. We don't have husbands (or wives) coming home asking for a $50 trick; nor do we have prostitutes hoping for everlasting love.

When social and market norms collide, trouble sets in. Take sex again. A guy takes a girl out for dinner and a movie, and he pays the bills. They go out again, and he pays the bills once more. They go out a third time, and he's still springing for the meal and the entertainment. At this point, he's hoping for at least a passionate kiss at the front door. His wallet is getting perilously thin, but worse is what's going on in his head: he's having trouble reconciling the social norm (courtship) with the market norm (money for sex). On the fourth date he casually mentions how much this romance is costing him. Now he's crossed the line. Violation! She calls him a beast and storms off. He should have known that one can't mix social and market norms—especially in this case—without implying that the lady is a tramp. He should also have remembered the immortal words of Woody Allen: "The most expensive sex is free sex."

A FEW YEARS ago, James Heyman (a professor at the University of St. Thomas) and I decided to explore the effects of social and market norms. Simulating the Thanksgiving incident would have been wonderful, but considering the damage we might have done to our participants' family relationships, we chose something more mundane. In fact, it was one of the most boring tasks we could find (there is a tradition in social science of using very boring tasks).

In this experiment, a circle was presented on the left side of a computer screen and a box was presented on the right. The task was to drag the circle, using the computer mouse, onto the square. Once the circle was successfully dragged to the square, it disappeared from the screen and a new circle appeared at the starting point. We asked the participants to drag as many circles as they could, and we measured how many circles they dragged within five minutes. This was our measure of their labor output—the effort that they would put into this task.

How could this setup shed light on social and market exchanges? Some of the participants received five dollars for participating in the short experiment. They were given the money as they walked into the lab; and they were told that at the end of the five minutes, the computer would alert them that the task was done, at which point they were to leave the lab. Because we paid them for their efforts, we expected them to apply market norms to this situation and act accordingly.

Participants in a second group were presented with the same basic instructions and task; but for them the reward was much lower (50 cents in one experiment and 10 cents in the other). Again we expected the participants to apply market norms to this situation and act accordingly.

Finally, we had a third group, to whom we introduced the tasks as a social request. We didn't offer the participants in this group anything concrete in return for their effort; nor did we mention money. It was merely a favor that we asked of them. We expected these participants to apply social norms to the situation and act accordingly.

How hard did the different groups work? In line with the ethos of market norms, those who received five dollars dragged on average 159 circles, and those who received 50 cents dragged on average 101 circles. As expected, more money caused our participants to be more motivated and work harder (by about 50 percent).

What about the condition with no money? Did these participants work less than the ones who got the low monetary payment—or, in the absence of money, did they apply social norms to the situation and work harder? The results showed that on average they dragged 168 circles, much more than those who were paid 50 cents, and just slightly more than those who were paid five dollars. In other words, our participants worked harder under the nonmonetary social norms than for the almighty buck (OK, 50 cents).

Perhaps we should have anticipated this. There are many examples to show that people will work more for a cause than for cash. A few years ago, for instance, the AARP asked some lawyers if they would offer less expensive services to needy retirees, at something like $30 an hour. The lawyers said no. Then the program manager from AARP had a brilliant idea: he asked the lawyers if they would offer free services to needy retirees. Overwhelmingly, the lawyers said yes.

What was going on here? How could zero dollars be more attractive than $30? When money was mentioned, the lawyers used market norms and found the offer lacking, relative to their market salary. When no money was mentioned they used social norms and were willing to volunteer their time. Why didn't they just accept the $30, thinking of themselves as volunteers who received $30? Because once market norms enter our considerations, the social norms depart.

A similar lesson was learned by Nachum Sicherman, an economics professor at Columbia, who was taking martial arts lessons in Japan. The sensei (the master teacher) was not charging the group for the training. The students, feeling that this was unfair, approached the master one day and suggested that they pay him for his time and effort. Setting down his bamboo *shinai*, the master calmly replied that if he charged them, they would not be able to afford him.

IN THE PREVIOUS experiment, then, those who got paid 50 cents didn't say to themselves, "Good for me; I get to do this favor for these researchers, and I am getting some money out of this," and continue to work harder than those who were paid nothing. Instead they switched themselves over to the market norms, decided that 50 cents wasn't much, and worked halfheartedly. In other words, when the market norms entered the lab, the social norms were pushed out.

But what would happen if we replaced the payments with a gift? Surely your mother-in-law would accept a good bottle of wine at dinner. Or how about a housewarming present (such as an eco-friendly plant) for a friend? Are gifts methods of exchange that keep us within the social exchange norms? Would participants receiving such gifts switch out of the social norms and into market norms, or would offering gifts as rewards maintain the participants in the social world?

To find out just where gifts fall on the line between social and market norms, James and I decided on a new experiment. This time, we didn't offer our

participants money for dragging circles across a computer screen; we offered them gifts instead. We replaced the 50-cent reward with a Snickers bar (worth about 50 cents), and the five-dollar incentive with a box of Godiva chocolates (worth about five dollars).

The participants came to the lab, got their reward, worked as much as they liked, and left. Then we looked at the results. As it turned out, all three experimental groups worked about equally hard during the task, regardless of whether they got a small Snickers bar (these participants dragged on average 162 circles), the Godiva chocolates (these participants dragged on average 169 circles), or nothing at all (these participants dragged on average 168 circles). The conclusion: no one is offended by a small gift, because even small gifts keep us in the social exchange world and away from market norms.

BUT WHAT WOULD HAPPEN if we mixed the signals for the two types of norms? What would happen if we blended the market norm with the social norm? In other words, if we said that we would give them a "50-*cent* Snickers bar" or a "*five-dollar* box of Godiva chocolates," what would the participants do? Would a "50-cent Snickers bar" make our participants work as hard as a "Snickers bar" made them work; or would it make them work halfheartedly, as the 50-cents made them work? Or would it be somewhere in the middle? The next experiment tested these ideas.

As it turned out, the participants were not motivated to work at all when they got the 50-cent Snickers bar, and in fact the effort they invested was the same as when they got a payment of 50 cents. They reacted to the explicitly priced gift in exactly the way they reacted to cash, and the gift no longer invoked social norms—by the mention of its cost, the gift had passed into the realm of market norms.

By the way, we replicated the setup later when we asked passersby whether they would help us unload a sofa from a truck. We found the same results. People are willing to work free, and they are willing to work for a reasonable wage; but offer them just a small payment and they will walk away. Gifts are also effective for sofas, and offering people a gift, even a small one, is sufficient to get them to help; but mention what the gift cost you, and you will see the back of them faster than you can say market norms.

THESE RESULTS SHOW that for market norms to emerge, it is sufficient to mention money (even when no money changes hands). But, of course, market norms are not just about effort—they relate to a broad range of behaviors, including self-reliance, helping, and individualism. Would simply getting people to think about money influence them to behave differently in these respects? This premise was explored in a set of fantastic experiments by Kathleen Vohs (a professor at the University of Minnesota), Nicole Mead (a graduate student at Florida State University), and Miranda Goode (a graduate student at the University of British Columbia).

They asked the participants in their experiments to complete a "scrambled-sentence task," that is, to rearrange sets of words to form sentences. For the

participants in one group, the task was based on neutral sentences (for example, "It's cold outside"); for the other group, the task was based on sentences or phrases related to money (for example, "High-paying salary"*). Would thinking about money in this manner be sufficient to change the way participants behave?

In one of the experiments, the participants finished the unscrambling task and were then given a difficult puzzle, in which they had to arrange 12 disks into a square. As the experimenter left the room, he told them that they could come to him if they needed any help. Who do you think asked for help sooner—those who had worked on the "salary" sentences, with their implicit suggestion of money; or those who had worked on the "neutral" sentences, about the weather and other such topics? As it turned out, the students who had first worked on the "salary" task struggled with the puzzle for about five and a half minutes before asking for help, whereas those who had first worked on the neutral task asked for help after about three minutes. Thinking about money, then, made the participants in the "salary" group more self-reliant and less willing to ask for help.

But these participants were also less willing to help others. In fact, after thinking about money these participants were less willing to help an experimenter enter data, less likely to assist another participant who seemed confused, and less likely to help a "stranger" (an experimenter in disguise) who "accidentally" spilled a box of pencils.

Overall, the participants in the "salary" group showed many of the characteristics of the market: they were more selfish and self-reliant; they wanted to spend more time alone; they were more likely to select tasks that required individual input rather than teamwork; and when they were deciding where they wanted to sit, they chose seats farther away from whomever they were told to work with. Indeed, just thinking about money makes us behave as most economists believe we behave—and less like the social animals we are in our daily lives.

This leads me to a final thought: when you're in a restaurant with a date, for heaven's sake don't mention the price of the selections. Yes, they're printed clearly on the menu. Yes, this might be an opportunity to impress your date with the caliber of the restaurant. But if you rub it in, you'll be likely to shift your relationship from the social to the market norm. Yes, your date may fail to recognize how much this meal is setting you back. Yes, your mother-in-law may assume that the bottle of wine you've presented is a $10 blend, when it's a $60 special reserve merlot. That's the price you have to pay, though, to keep your relationships in the social domain and away from market norms.

SO WE LIVE in two worlds: one characterized by social exchanges and the other characterized by market exchanges. And we apply different norms to these two kinds of relationships. Moreover, introducing market norms into social exchanges, as we have seen, violates the social norms and hurts the relationships. Once this type of mistake has been committed, recovering a social relationship is difficult. Once you've offered to pay for the delightful Thanksgiving dinner, your mother-in-law will remember the incident for years to come. And if you've ever offered a potential romantic partner the chance to cut to the chase, split the cost of the courting process, and simply go to bed, the odds are that you will have wrecked

the romance forever.

My good friends Uri Gneezy (a professor at the University of California at San Diego) and Aldo Rustichini (a professor at the University of Minnesota) provided a very clever test of the long-term effects of a switch from social to market norms.

A few years ago, they studied a day care center in Israel to determine whether imposing a fine on parents who arrived late to pick up their children was a useful deterrent. Uri and Aldo concluded that the fine didn't work well, and in fact it had long-term negative effects. Why? Before the fine was introduced, the teachers and parents had a social contract, with social norms about being late. Thus, if parents were late—as they occasionally were—they felt guilty about it—and their guilt compelled them to be more prompt in picking up their kids in the future. (In Israel, guilt seems to be an effective way to get compliance.) But once the fine was imposed, the day care center had inadvertently replaced the social norms with market norms. Now that the parents were *paying* for their tardiness, they interpreted the situation in terms of market norms. In other words, since they were being fined, they could decide for themselves whether to be late or not, and they frequently chose to be late. Needless to say, this was not what the day care center intended.

BUT THE REAL story only started here. The most interesting part occurred a few weeks later, when the day care center removed the fine. Now the center was back to the social norm. Would the parents also return to the social norm? Would their guilt return as well? Not at all. Once the fine was removed, the behavior of the parents didn't change. They continued to pick up their kids late. In fact, when the fine was removed, there was a slight increase in the number of tardy pickups (after all, both the social norms and the fine had been removed).

This experiment illustrates an unfortunate fact: when a social norm collides with a market norm, the social norm goes away for a long time. In other words, social relationships are not easy to reestablish. Once the bloom is off the rose—once a social norm is trumped by a market norm—it will rarely return.

THE FACT THAT we live in both the social world and the market world has many implications for our personal lives. From time to time, we all need someone to help us move something, or to watch our kids for a few hours, or to take in our mail when we're out of town. What's the best way to motivate our friends and neighbors to help us? Would cash do it—a gift, perhaps? How much? Or nothing at all? This social dance, as I'm sure you know, isn't easy to figure out—especially when there's a risk of pushing a relationship into the realm of a market exchange.

Here are some answers. Asking a friend to help move a large piece of furniture or a few boxes is fine. But asking a friend to help move a lot of boxes or furniture is not—especially if the friend is working side by side with movers who are getting paid for the same task. In this case, your friend might begin to feel that he's being used. Similarly, asking your neighbor (who happens to be a lawyer) to bring in your mail while you're on vacation is fine. But asking him to spend the same amount of time preparing a rental contract for you—free—is not.

THE DELICATE BALANCE between social and market norms is also evident in the business world. In the last few decades companies have tried to market themselves as social companions—that is, they'd like us to think that they and we are family, or at least are friends who live on the same cul-de-sac. "Like a good neighbor, State Farm is there" is one familiar slogan. Another is Home Depot's gentle urging: "You can do it. We can help."

Whoever started the movement to treat customers socially had a great idea. If customers and a company are family, then the company gets several benefits. Loyalty is paramount. Minor infractions—screwing up your bill and even imposing a modest hike in your insurance rates—are accommodated. Relationships of course have ups and downs, but overall they're a pretty good thing.

But here's what I find strange: although companies have poured billions of dollars into marketing and advertising to create social relationships—or at least an impression of social relationships—they don't seem to understand the nature of a social relationship, and in particular its risks.

For example, what happens when a customer's check bounces? If the relationship is based on market norms, the bank charges a fee, and the customer shakes it off. Business is business. While the fee is annoying, it's nonetheless acceptable. In a social relationship, however, a hefty late fee—rather than a friendly call from the manager or an automatic fee waiver—is not only a relationship-killer; it's a stab in the back. Consumers will take personal offense. They'll leave the bank angry and spend hours complaining to their friends about this awful bank. After all, this was a relationship framed as a social exchange. No matter how many cookies, slogans, and tokens of friendship a bank provides, one violation of the social exchange means that the consumer is back to the market exchange. It can happen that quickly.

What's the upshot? If you're a company, my advice is to remember that you can't have it both ways. You can't treat your customers like family one moment and then treat them impersonally—or, even worse, as a nuisance or a competitor —a moment later when this becomes more convenient or profitable. This is not how social relationships work. If you want a social relationship, go for it, but remember that you have to maintain it under all circumstances.

On the other hand, if you think you may have to play tough from time to time—charging extra for additional services or rapping knuckles swiftly to keep the consumers in line—you might not want to waste money in the first place on making your company the fuzzy feel-good choice. In that case, stick to a simple value proposition: state what you give and what you expect in return. Since you're not setting up any social norms or expectations, you also can't violate any —after all, it's just business.

COMPANIES HAVE ALSO tried to establish social norms with their employees. It wasn't always this way. Years ago, the workforce of America was more of an industrial, market-driven exchange. Back then it was often a nine-to-five, time-clock kind of mentality. You put in your 40 hours and you got your paycheck on Friday. Since workers were paid by the hour, they knew exactly when they were working for the man, and when they weren't. The factory whistle blew (or the

corporate equivalent took place), and the transaction was finished. This was a clear market exchange, and it worked adequately for both sides.

Today companies see an advantage in creating a social exchange. After all, in today's market we're the makers of intangibles. Creativity counts more than industrial machines. The partition between work and leisure has likewise blurred. The people who run the workplace want us to think about work while we're driving home and while we're in the shower. They've given us laptops, cell phones, and BlackBerries to bridge the gap between the workplace and home.

Further blurring the nine-to-five workday is the trend in many companies to move away from hourly rates to monthly pay. In this 24/7 work environment social norms have a great advantage: they tend to make employees passionate, hardworking, flexible, and concerned. In a market where employees' loyalty to their employers is often wilting, social norms are one of the best ways to make workers loyal, as well as motivated.

Open-source software shows the potential of social norms. In the case of Linux and other collaborative projects, you can post a problem about a bug on one of the bulletin boards and see how fast someone, or often many people, will react to your request and fix the software—using their own leisure time. Could you pay for this level of service? Most likely. But if you had to hire people of the same caliber they would cost you an arm and a leg. Rather, people in these communities are happy to give their time to society at large (for which they get the same social benefits we all get from helping a friend paint a room). What can we learn from this that is applicable to the business world? There are social rewards that strongly motivate behavior—and one of the least used in corporate life is the encouragement of social rewards and reputation.

IN TREATING THEIR EMPLOYEES—much as in treating their customers—companies must understand their implied long-term commitment. If employees promise to work harder to achieve an important deadline (even canceling family obligations for it), if they are asked to get on an airplane at a moment's notice to attend a meeting, then they must get something similar in return—something like support when they are sick, or a chance to hold on to their jobs when the market threatens to take their jobs away.

Although some companies have been successful in creating social norms with their workers, the current obsession with short-term profits, outsourcing, and draconian cost cutting threatens to undermine it all. In a social exchange, after all, people believe that if something goes awry the other party will be there for them, to protect and help them. These beliefs are not spelled out in a contract, but they are general obligations to provide care and help in times of need.

Again, companies cannot have it both ways. In particular, I am worried that the recent cuts we see in employees' benefits—child care, pensions, flextime, exercise rooms, the cafeteria, family picnics, etc.—are likely to come at the expense of the social exchange and thus affect workers' productivity. I am particularly worried that cuts and changes in medical benefits are likely to transform much of the employer-employee social relationship to a market relationship.

If companies want to benefit from the advantages of social norms, they need to do a better job of cultivating those norms. Medical benefits, and in particular comprehensive medical coverage, are among the best ways a company can express its side of the social exchange. But what are many companies doing? They are demanding high deductibles in their insurance plans, and at the same time are reducing the scope of benefits. Simply put, they are undermining the social contract between the company and the employees and replacing it with market norms. As companies tilt the board, and employees slide from social norms to the realm of market norms, can we blame them for jumping ship when a better offer appears? It's really no surprise that "corporate loyalty," in terms of the loyalty of employees to their companies, has become an oxymoron.

Organizations can also think consciously about how people react to social and market norms. Should you give an employee a gift worth $1,000 or pay him or her an extra $1,000 in cash? Which is better? If you ask the employees, the majority will most likely prefer cash over the gift. But the gift has its value, though this is sometimes ill understood—it can provide a boost to the social relationship between the employer and the employee, and by doing so provide long-term benefits to everyone. Think of it this way: who do you suppose is likely to work harder, show more loyalty, and truly love his work more—someone who is getting $1,000 in cash or someone who is getting a personal gift?

Of course, a gift is a symbolic gesture. And to be sure, no one is going to work for gifts rather than a salary. For that matter, no one is going to work for nothing. But if you look at companies like Google, which offers a wide variety of benefits for employees (including free gourmet lunches), you can see how much goodwill is created by emphasizing the social side of the company-worker relationship. It's remarkable how much work companies (particularly start-ups) can get out of people when social norms (such as the excitement of building something together) are stronger than market norms (such as salaries stepping up with each promotion).

If corporations started thinking in terms of social norms, they would realize that these norms build loyalty and—more important—make people want to extend themselves to the degree that corporations need today: to be flexible, concerned, and willing to pitch in. That's what a social relationship delivers.

THIS QUESTION OF social norms in the workplace is one we should be thinking about frequently. America's productivity depends increasingly on the talent and efforts of its workers. Could it be that we are driving business from the realm of social norms into market norms? Are workers thinking in terms of money, rather than the social values of loyalty and trust? What will that do to American productivity in the long run, in terms of creativity and commitment? And what of the "social contract" between government and the citizen? Is that at risk as well?

At some level we all know the answers. We understand, for instance, that a salary alone will not motivate people to risk their lives. Police officers, firefighters, soldiers—they don't die for their weekly pay. It's the social norms—pride in their profession and a sense of duty—that will motivate them to give up their lives and health. A friend of mine in Miami once accompanied a U.S. customs agent on a patrol of the offshore waters. The agent carried an assault rifle

and could certainly have pounded several holes into a fleeing drug boat. But had he ever done so? No way, he replied. He wasn't about to get himself killed for the government salary he received. In fact, he confided, his group had an unspoken agreement with the drug couriers: the feds wouldn't fire if the drug dealers didn't fire. Perhaps that's why we rarely (if ever) hear about gun battles on the edges of America's "war on drugs."

How could we change this situation? First, we could make the federal salary so good that the customs agent would be willing to risk his life for it. But how much money is that? Compensation equal to what the typical drug trafficker gets for racing a boat from the Bahamas to Miami? Alternatively, we could elevate the social norm, making the officer feel that his mission is worth more than his base pay—that we honor him (as we honor our police and firefighters) for a job which not only stabilizes the structure of society but also saves our kids from all kinds of dangers. That would take some inspirational leadership, of course, but it could be done.

Let me describe how that same thought applies to the world of education. I recently joined a federal committee on incentives and accountability in public education. This is one aspect of social and market norms that I would like to explore in the years to come. Our task is to reexamine the "No Child Left Behind" policy, and to help find ways to motivate students, teachers, administrators, and parents.

My feeling so far is that standardized testing and performance-based salaries are likely to push education from social norms to market norms. The United States already spends more money per student than any other Western society. Would it be wise to add more money? The same consideration applies to testing: we are already testing very frequently, and more testing is unlikely to improve the quality of education.

I suspect that one answer lies in the realm of social norms. As we learned in our experiments, cash will take you only so far—social norms are the forces that can make a difference in the long run. Instead of focusing the attention of the teachers, parents, and kids on test scores, salaries, and competition, it might be better to instill in all of us a sense of purpose, mission, and pride in education. To do this we certainly can't take the path of market norms. The Beatles proclaimed some time ago that you "Can't Buy Me Love" and this also applies to the love of learning—you can't buy it; and if you try, you might chase it away.

So how can we improve the educational system? We should probably first rethink school curricula, and link them in more obvious ways to social goals (elimination of poverty and crime, elevation of human rights, etc.), technological goals (boosting energy conservation, space exploration, nanotechnology, etc.), and medical goals (cures for cancer, diabetes, obesity, etc.) that we care about as a society. This way the students, teachers, and parents might see the larger point in education and become more enthusiastic and motivated about it. We should also work hard on making education a goal in itself, and stop confusing the number of hours students spend in school with the quality of the education they get. Kids can get excited about many things (baseball, for example), and it is our challenge as a society to make them want to know as much about Nobel laureates as they now know about baseball players. I am not suggesting that igniting a

social passion for education is simple; but if we succeed in doing so, the value could be immense.

MONEY, AS IT turns out, is very often the most expensive way to motivate people. Social norms are not only cheaper, but often more effective as well.

So what good is money? In ancient times, money made trading easier: you didn't have to sling a goose over your back when you went to market, or decide what section of the goose was equivalent to a head of lettuce. In modern times money has even more benefits, as it allows us to specialize, borrow, and save.

But money has also taken on a life of its own. As we have seen, it can remove the best in human interactions. So do we need money? Of course we do. But could there be some aspects of our life that would be, in some ways, better without it?

That's a radical idea, and not an easy one to imagine. But a few years ago I had a taste of it. At that time, I got a phone call from John Perry Barlow, a former lyricist for the Grateful Dead, inviting me to an event that proved to be both an important personal experience and an interesting exercise in creating a moneyless society. Barlow told me that I had to come to Burning Man with him, and that if I did, I would feel as if I had come home. Burning Man is an annual week-long event of self-expression and self-reliance held in Black Rock Desert, Nevada, regularly attended by more than 40,000 people. Burning Man started in 1986 on Baker Beach in San Francisco, when a small crowd designed, built, and eventually set fire to an eight-foot wooden statue of a man and a smaller wooden dog. Since then the size of the man being burned and the number of people who attend the festivities has grown considerably, and the event is now one of the largest art festivals, and an ongoing experiment in temporary community.

Burning Man has many extraordinary aspects, but for me one of the most remarkable is its rejection of market norms. Money is not accepted at Burning Man. Rather, the whole place works as a gift exchange economy—you give things to other people, with the understanding that they will give something back to you (or to someone else) at some point in the future. Thus, people who can cook might fix a meal. Psychologists offer free counseling sessions. Masseuses massage those lying on tables before them. Those who have water offer showers. People give away drinks, homemade jewelry, and hugs. (I made some puzzles at the hobby shop at MIT, and gave them to people. Mostly, people enjoyed trying to solve them.)

At first this was all very strange, but before long I found myself adopting the norms of Burning Man. I was surprised, in fact, to find that Burning Man was the most accepting, social, and caring place I had ever been. I'm not sure I could easily survive in Burning Man for all 52 weeks of the year. But this experience has convinced me that life with fewer market norms and more social norms would be more satisfying, creative, fulfilling, and fun.

The answer, I believe, is not to re-create society as Burning Man, but to remember that social norms can play a far greater role in society than we have been giving them credit for. If we contemplate how market norms have gradually taken over our lives in the past few decades—with their emphasis on higher

salaries, more income, and more spending—we may recognize that a return to some of the old social norms might not be so bad after all. In fact, it might bring quite a bit of the old civility back to our lives.

Reflections on Social Norms: Lessons on Gifts

When we mix social and monetary norms, strange and undesirable things can happen. For example, if you walk your date home after a wonderful evening together, don't mention how much the evening set you back. That is not a good strategy for getting a passionate good-night kiss. (I certainly do not recommend this as an experiment, but if you do try it, let me know how it turns out.) Dating, of course, is just one arena in which we can mess up a social relationship by introducing financial norms, and this danger lurks around many corners.

On some level we all know this, and therefore we sometimes deliberately make decisions that do not fall into line with rational economic theory. Think of gifts, for example. From a standard economic perspective, they are a waste of money. Imagine that you invite me to your home for dinner one evening, and I decide to spend $50 on a nice bottle of Bordeaux as a token of gratitude. There are some problems with this decision: You might not like Bordeaux. You might have preferred something else: a copy of *Predictably Irrational*, a DVD of *Citizen Kane*, or a blender. This means that the bottle of wine that cost me $50 might be worth, at most, $25 to you in terms of its utility. That is, for $25 you could get something else that would make you just as happy as my $50 bottle of wine.

Now, if giving gifts was a rational activity, I would come to dinner and say, "Thank you for inviting me for dinner. I was going to spend $50 on a bottle of Bordeaux, but I realize that this might provide you with far less happiness than $50 in cash." I peel off five $10 bills, hand them to you, and add, "Here you go. You can decide how best to spend it." Or maybe I would give you $40 in cash and make us both better off—not to mention saving myself the trouble of shopping for wine.

Although we all realize that offering cash instead of gifts is more economically efficient, I don't expect that many people will follow this rational advice, because we all know that doing so will in no way endear us to our hosts. If you want to demonstrate affection, or strengthen your relationship, then giving a gift—even at the risk that it won't be appreciated as much as you hoped—is the only way to go.

So imagine two scenarios. Let's say it's the holidays, and two different neighbors invite you to their parties in the same week. You accept both invitations. In one case, you do the irrational thing and give Neighbor X a bottle of Bordeaux; for the second party you adopt the rational approach and give Neighbor Z $50 in cash. The following week, you need some help moving a sofa. How comfortable would you be approaching each of your neighbors, and how do you think each would react to your request for a favor? The odds are that Neighbor X will step in to help. And Neighbor Z? Since you have already paid him once (to make and share dinner with you), his logical response to your request for help might be, "Fine. How much will you pay me this time?" Again, the prospect of acting rationally, financially speaking, sounds deeply irrational in terms of social norms.

The point is that while gifts are financially inefficient, they are an important social lubricant. They help us make friends and create long-term relationships

that can sustain us through the ups and downs of life. Sometimes, it turns out, a waste of money can be worth a lot.

Reflections on Social Norms: Benefits in the Workplace

The same general principles regarding social norms also apply to the workplace. In general, people work for a paycheck, but there are other, intangible benefits we get from our jobs. These are also very real and very important, yet much less understood.

Often, when I'm on a flight and the people sharing the row with me don't immediately put their headphones on, I enter into an interesting discussion with one of them. Invariably, I learn a lot about my neighbor's work, work history, and future projects. On the other hand, I discover very little about the person's family, favorite music, movies, or hobbies. Unless my neighbor gives me a business card, I almost never learn his or her name until the moment we are both about to leave the plane. There are probably many reasons for this, but I suspect that one of them is that most people take a lot of pride in their work. Of course this may not be true of everyone, but I think that for many people the workplace is not just a source of money but also a source of motivation and self-definition.

Such feelings benefit both the workplace and the employee. Employers who can foster these feelings gain dedicated, motivated employees who think about solving job-related problems even after the workday is over. And employees who take pride in their work feel a sense of happiness and purpose. But in the same way that market norms may undermine social norms, it may be that market norms also erode the pride and meaning people get from the workplace (for example, when we pay schoolteachers according to their students' performance on standardized tests).

Imagine that you work for me, and that I want to give you a year-end bonus. I offer you a choice: $1,000 in cash or an all-expenses-paid weekend in the Bahamas, which would cost me $1,000. Which option would you choose? If you are like most people who have answered this question, you would take the cash. After all, you may have already been to the Bahamas and may not have enjoyed being there very much, or maybe you'd prefer to spend a weekend at a resort closer to home and use the remainder of the bonus money to buy a new iPod. In either case, you think that you can best decide for yourself how to spend the money.

This arrangement seems to be financially efficient, but would it increase your happiness with your work, or your loyalty to the company? Would it make me a better boss? Would it improve the employer-employee relationship in any way? I suspect that both your and my best interests would be better served if I simply didn't offer you a choice and just sent you on the Bahamas vacation. Consider how much more relaxed and refreshed you would feel, and how well you would perform, after a relaxing weekend of sun and sand, compared with how you would feel and behave after you got the $1,000 bonus. Which would help you feel more committed to your job, more enjoyment in your work, more dedication to your boss? Which gift would make you more likely to stay long hours one night to meet an important deadline? On all of these, the vacation beats the cash hands down.

This principle doesn't apply only to gifts. Many employers, in an effort to show

their employees how well they are treating them, add different line items to their paycheck stubs, describing exactly how much money the employer is spending on health care, retirement plans, the gym at work, and the cafeteria. These items are all legitimate, and they reflect real costs to the employer, but overtly stating the prices of these items changes the workplace from a social environment in which the employer and employee have a deep commitment to each other to a transactional relationship. Explicitly stating the financial value of these benefits can also diminish enjoyment, motivation, and loyalty to the workplace—negatively affecting both the employer-employee relationship and our own pride and happiness at work.

Gifts and employee benefits seem, at first glance, to be an odd and inefficient way of allocating resources. But with the understanding that they fulfill an important role in creating long-term relationships, reciprocity, and positive feelings, companies should try to keep benefits and gifts in the social realm.

Reflections on Market Norms and Romance

One of the great philosophers of our time, Jerry Seinfeld, unintentionally demonstrated that social and market norms—much like an acid and a base in chemistry—clash if we try to mix them. In one episode of *Seinfeld*, Jerry hires a maid. This is not all that unusual in itself, except that in this case, the maid happens to be very attractive and naturally (for New York City) she is waiting to be "discovered." Elaine predicts the inevitable, that Jerry will eventually start dating the maid. Later, after celebrating being right about her prediction, she comments sarcastically on what a prudent undertaking it is to date one's maid. Here Elaine sagely points out the inherent difficulties in uniting the market norm (maid) and social norm (girlfriend). Jerry, expecting as much, gives a haphazard defense, arguing that he would never trip lightly into such a fraught situation and claiming that their personal and work relationships are completely separate. When the next inevitable evolution of their "relationship" occurs—that is, the maid/girlfriend stops cleaning entirely (but takes the money anyway)—Kramer is horrified and calls Jerry a john, picking up on the fact that it's not exactly normal to pay one's significant other for services rendered. Both relationships (girlfriend and maid) end when Jerry claims that they're through and, in the same breath, that she's fired. What happened is that Jerry mixed two competing norms—social and market—before realizing that they cannot comfortably coexist.

Romantic relationships, in both fiction and real life, can provide useful insights into a lot of areas in behavioral economics. But as we've already seen, they are particularly useful in helping us think about the strange combinations of social and market norms. One wonderfully sad example of a person who did not understand this complexity is a woman in New York who, in 2007, posted a personal ad on Craigslist. In her ad, she said that she was seeking a husband who earned more than $500,000 a year. She described herself as "spectacularly beautiful," "articulate," and "superficial." She also said that while she had no problems dating businessmen who made $250,000, she was unable to break the $250,000 barrier and find someone above this income level. She hoped to date someone who could get her what she really wanted: a nice apartment on Central Park West.

Let's assume, for the sake of argument, that this woman really was spectacularly beautiful, articulate, and wonderful in every way. What would happen if she walked into a bar filled with stockbrokers, found her guy, and explicitly stated her goal as she did in the ad, and he accepted her offer? The terms of the relationship would certainly be established, putting them firmly in the market norm, rather than the social norm, domain.

Now, say that this "happy" couple eventually gets married. What would happen the first time she didn't want to have sex with her stockbroker husband or refused to spend the holidays with his mother? My guess is that the give-and-take that is so common and acceptable in regular romantic relationships (and in every social exchange) would not be part of this relationship . . . and that the explicit exchange of beauty for money would ensure that the relationship would break down.

I don't actually know what became of this woman, but the responses to her ad make me suspect that this approach to finding a husband did not have a good ending. Because she bluntly introduced market norms into the relationship she was looking for, many respondents compared her offer to a business transaction. In fact, one anonymous respondent took her market norms framing to the next level. He assured the woman that he met her criteria but explained that the proposal was a "crappy business deal" because his assets (money) were likely to appreciate over time, while her assets (looks) would certainly depreciate as she aged. He also added, correctly, that in this situation, the economically rational thing to do would be to lease rather than buy.

CHAPTER 5

The Power of a Free Cookie

How free Can Make Us Less Selfish

Some time ago, I decided to go watch firsthand one of the most infamous acts of raw, unabashed, supply-and-demand capitalism in action. I am talking, of course, about Filene's Basement's "Running of the Brides"—an event that has been held annually since 1947 and is the department store's answer to the famous "Running of the Bulls" in Pamplona, Spain. Instead of watching thousand-pound bulls trampling and goring foolhardy humans, I observed about a thousand blushing brides-to-be (and their minions) trampling one another in a mass grab for discount-priced designer wedding dresses. According to the store's Web site,[5] gowns originally priced at thousands of dollars are on this day offered for a pittance, from $249 to $699.

Early on the morning of the sale, the brides, each with a small army of moms and friends, line up outside the store (some even camp out the night before). The minute the doors open, they turn into a frantic, screaming, pushing mob, running to the racks to tear off as many dresses as they can carry. (One piece of particularly useful advice for brides: put all your friends in brightly colored uniforms or silly headgear so you can identify them in the melee as they grab armfuls of dresses.) It takes just a minute or so for the racks to be stripped to bare metal. As soon as they have their piles of dresses, the women strip off their clothes and begin trying them on. Dresses that don't fit are tossed aside, and the poor, bedraggled store assistants try to pick them off the floor and re-rack them.

Although I'd heard horror stories of injuries and scuffles, I personally didn't see a lot of violence. But I did witness rampant selfishness, to say nothing of the air turning blue from the terrible language. (I suspect that if their fiancés were to witness this event, it might have led to a serious rethinking of marriage proposals.)

NOW, TRADITIONAL ECONOMICS takes a very simple and straightforward view of the scene at Filene's Basement when prices on wedding gowns are so dramatically reduced. When a Vera Wang gown is reduced from $10,000 to $249, the excitement ("demand," in economic-speak) over the gown dramatically increases. More precisely, demand increases for two reasons. According to the first law of demand, it increases because more women are now in the market for designer gowns (they can now afford them). And according to the second law of demand, it increases because at these prices women might buy multiple units. This second law is less relevant for wedding gowns, where women presumably need just one, but central in cases where we need multiple units (cookies, sweaters, etc.). Still, even in the case of wedding dresses, multiple women have been sighted leaving Filene's Basement with more than one gown. These two laws are the nuts and bolts of the standard economic rule of demand. (Admittedly, the Filene's event isn't just any occurrence of "increased demand." It's more like an all-out bridal

battlefield.)

THESE TWO ECONOMIC laws of demand seem perfectly reasonable, but as we learned in Chapter 4, "The Cost of Social Norms," market rules are just some of the forces that operate on us. As social animals, we also have social forces to contend with—and when economic and social forces mix, the outcome is sometimes different from what we would expect. When we explored the interactions between social and market norms, we basically found that when we add money to a situation that operates on social norms, motivation can decrease rather than increase. For example, if I asked you to help me change my tire, you'll probably think to yourself: "Okay, Dan's a nice enough guy most of the time, so I will be happy to help him out." But if I asked you: "Would you help me change the tire of my car—how about [checking my wallet] $3 for your help?" Now you'll think: "Man, no way, what a jerk! Does he really think my time is worth that little?" What this means is that when I ask you for a favor and add $3 to the mix, you don't think to yourself: "How wonderful! I get to help Dan *and* I get to earn $3." Instead, you change your perspective on the situation, look at it as work, and conclude that it is not worth your time (of course, if I offered you $175, you would most likely take on this job).

The basic lesson, then, is that when we offer people a financial payment in a situation that is governed by social norms, the added payment could actually reduce their motivation to engage and help out.

But what if the situation was reversed and we asked people to pay *us* for something? Would the effect of social norms work in the same way? This was the question that Uri Gneezy (a professor at the University of California at San Diego), Ernan Haruvy (a professor at the University of Texas at Dallas), and I wanted to explore: the effect of mixing social and market norms on *demand*.

To think more concretely about this effect, imagine that one of your coworkers—let's call her Susan—also happens to be a rather talented baker. One weekend, in a fit of boredom, Susan bakes a hundred chewy chocolate-chip-oatmeal cookies using her grandmother's famous recipe, and it just so happens that there are about a hundred people in the office. Since your desk is adjacent to hers, Susan comes to your office first and places before you the box with all those delicious-smelling confections. How many would you take, and how would you decide this? Chances are you would quickly consider, among other things, your level of hunger, your waistline, and your love of chocolate-chip-oatmeal cookies. You might also think about how your co-workers would feel if the cookies ran out, and if they learned that you took a lot of them. With all this in mind, including the importance of social norms, you decide to take one or two.

Now, consider a variation of this situation. This time, Susan comes by your desk asking you if you want to buy cookies for a nickel a piece. Now how many would you take, and what would dictate your decision? Most likely, you would again take into account your level of hunger, your waistline, and your love of chocolate-chip-oatmeal cookies. But unlike the previous case, this time you will have no compunction about buying a bunch to eat and take home (knowing how much your kids would love them), and you would not even think about the fact

that by getting so many of Susan's cookies you are depriving your coworkers from that same joy.

Why would your decision change so much once Susan asks for a nickel apiece? Because, very simply, by asking for money, she has introduced market norms into the equation, and these have chased away the social norms that governed the case of the free cookies. More interesting, it's clear in both cases that if you take multiple cookies, there will be fewer for the other people in your office. But if Susan offers her cookies for free, I am willing to bet that you will think about social justice, the consequences of appearing greedy, and the welfare of your coworkers. Once money is introduced into the exchange, you stop thinking about what's socially right and wrong, and you simply want to maximize your cookie intake.

In the same way, if you go to Filene's Basement and discover a fantastic deal on wedding gowns, you don't naturally think about all the other women who would also like to score a similar deal on their Vera Wangs—and therefore you grab as many dresses as you can. In economic exchanges, we are perfectly selfish and unfair. And we think that following our wallets is the right thing to do.

URI, ERNAN, AND I decided to find out what would actually happen in the two Susan cookie scenarios. To that end, we set up one of our makeshift candy stands at the MIT student center and watched for the outcome of two experimental scenarios:

Scenario 1: Pretend you're a college student hurrying through the student center on your way to a late afternoon class. You see a booth up ahead with a sign that reads "Starburst Fruit Chews for 1¢ each." Let's say that, thinking quickly, you recall that you haven't eaten lunch, that the last time you bought Starburst was in the movie theater, and, hey, they're only one cent each. So you go over and buy ten Starbursts. Lunch is served!

Scenario 2: The setting is the same, but this time the sign reads "Starburst Fruit Chews for free." You reminisce over the memory of popping these candies in your mouth when you went to the movies as a kid, happily recalling that it was one of the few times your parents allowed you to eat lots of sugar. Now what would you do? How many Starbursts would you take? According to the two laws of demand, with this new, irresistibly reduced price of zero, more people will go for the Starburst, and those who do will take more of the colorful square candy.

We set up our candy booth in the afternoon hours when the stream of students was more or less steady, and from time to time, we switched the conditions by alternating the free and the 1¢ signs (the penny price represented what we called the "monetary condition"). We counted the number of students who stopped by our booth and how many Starbursts they either bought or picked up. We found that during an average hour in the monetary condition, about 58 students stopped by and purchased candy, while in an average hour in the free condition, 207 students stopped by to take candy. Altogether, nearly three times the number of students stopped at the booth when Starbursts were free. Just as the theory of demand predicts, the decrease in price resulted in a greater *number* of people consuming the product. So far so good for the first law of demand.

Now, given the second law of demand, you'd assume that once the price drops from 1¢ to zero, each of the students who took candy would take more

units. And since the number of students who stopped by was almost three times as large, you might expect that together these two forces of demand will make the total demand in our free condition much larger than the demand in the monetary condition.

So how many more Starbursts did our students pick up when they were free? Trick question: They picked up *fewer* Starbursts!

When the Starbursts cost a cent apiece, the average number of candies per customer was 3.5, but when the price went down to zero, the average went down to 1.1 per customer. The students limited themselves to a large degree when the candy was free. In fact, almost all the students applied a very simple social-norm rule in this situation—they politely took one and only one Starburst. This, of course, is the opposite of the second law of demand. And how did these two forces of demand work together? In total, the increase due to the greater number of people that stopped by and the decrease due to the reduction in the number of candies that each person took resulted in students collectively taking *fewer* Starbursts as the price decreased from 1¢ to free.

What these results mean is that when price is not a part of the exchange, we become less selfish maximizers and start caring more about the welfare of others. We saw this demonstrated by the fact that when the price decreased to zero, customers restrained themselves and took far fewer units. So while the product (candy, in our case) was more attractive to more people, it also made people think more about others, care about them, and sacrifice their own desires for the benefit of others. As it turns out, we are caring social animals, but when the rules of the game involve money, this tendency is muted.

THE RESULTS FROM our experiment also help explain one of the great mysteries in life: why, when we are dining out with friends, taking the last olive feels like such a big deal.

Imagine you go to a friend's birthday party. The appetizers are luscious: there's a lovely spread of cheese and fruit; dishes of gherkins, kalamata olives, and tapenades; and lots of tiny little crostini. You walk around the room talking to old friends, and the wine is flowing. At some point, you wander into the kitchen and notice the delicious-looking four-decker Red Velvet cake (your personal favorite). As you chitchat with the other guests, you can't stop thinking about that mouthwatering cake. All you really want to do is abscond with the entire thing, eat as much as you can in the laundry room without anyone knowing, and blame the dog if anyone asks. But what do you do? You balance your own desire with the desires of your friends, and you end up with only a medium-sized slice.

Recently, I was in an analogous situation with two of my colleagues and friends, Jiwoong Shin and Nina Mazar. If you've ever been to a sushi restaurant with friends, you know that as the California rolls and sashimi pieces on the plate in the middle of the table start to dwindle, the people sitting around it gradually become shyer about popping them into their mouths. At the end of our meal, there was one lonely spicy tuna left, and none of us seemed to be willing to put it out of its misery. When the waitress came to bring us the check and take away the plate with the lone sushi, I asked her how often people leave a single piece at the end of the meal. "Oh," she said, "I find one extra piece left almost every time. I

think it is even more common than people finishing all their sushi."

Now I have eaten a lot of sushi in my life, and I can't remember a time either when I was dining alone or when I got my own personal portion of sushi when I left anything on the plate. Somehow, when it's just me who's eating, I always manage to finish it all. But when the sushi is served in a large plate in the middle of the table, it just feels like taking the last one would be, well, a bit déclassé. "I really can't eat any more," I might say to my friends. "Go ahead. You take it."

What is this sushi magic? Simply put, the communal plate transforms the food into a shared resource, and once something is part of the social good, it leads us into the realm of social norms, and with that the rules for sharing with others.

BACK TO OUR experiments, the next question we wanted to examine was whether the pattern of demand that we observed in the experiments was really due to the change from some payment to no payment. Or would it also happen when we discount prices of candies to anything above zero? According to the theory of social norms, this odd behavior of demand should manifest itself only when the price drops to zero—because only when price is not a part of an exchange do we start thinking about social consequences of our actions. Uri, Ernan, and I decided to take a closer look at this hypothesis in our next experiment.

This experiment worked much like the previous one, except we returned to the trusty and super-delicious Lindt chocolate truffles (which were by now an experimental staple for us). We offered the chocolates to passing students at a broader range of prices. We'd already seen what economists call a "backward sloping demand curve" when the price was reduced from 1¢ to free (meaning demand went down instead of up when the price decreased). What would happen to demand when we decreased the price from 10¢ to 5¢? From 5¢ to 1¢? Or, as in the first experiment, when we decreased the price from 1¢ to free?

When we dropped the chocolate prices from 10¢ to 5¢, the predictions of both laws of demand were verified, and in total we saw an increase in demand of about 240 percent. Similarly, when the price went from 5¢ to 1¢, the predictions of both laws of demand were verified, and in total we saw an increase in demand of about 400 percent. But, as we saw in our first experiment when we reduced the price from 1¢ to free, the first law of demand was verified (more people stopped for chocolate) but the second law of demand was disconfirmed (the people who took chocolate took less not more), and in total, with more people taking less, we saw a decrease in demand of about 50 percent.

What these results mean is that the theory of demand is a solid one—*except* when we're dealing with the price of zero. Whenever the price is not part of the exchange, social norms become entangled. These social norms get people to consider the welfare of others and, therefore, limit consumption to a level that does not place too much of a burden on the available resource. In essence, when prices are zero and social norms are a part of the equation, people look at the world as a communal good. The important lesson from all of this? Not mentioning prices ushers in social norms, and with those social norms, we start caring more about others.

ANOTHER IMPORTANT LESSON from Chapter 4 was about the ability to obfuscate exchanges in nonfinancial terms and, by doing so, avoid squashing ("crowding

out," in economic terms) the benefits of social norms. (Giving your mother-in-law a gift is a good idea, but paying her for a wonderful Thanksgiving dinner is not recommended, even if both gestures would cost you the same amount of money.)

If obfuscation can provide an important wedge that keeps us humming along the social norm track, and if gifts are one mechanism for obfuscating, what about other such mechanisms? What about effort? Over the years, I have been a beta tester for many software products, and in retrospect, it is amazing to realize how much time and effort and how many computer crashes I have endured from this activity. Could it be that because these software companies asked me for my time and effort without offering money, I was eager and happy to help them, even at substantial cost to myself?

Now, effort is clearly not the same as a gift, but could it be that it is also different from money? Perhaps there's a range with strict financial exchange norms at one extreme, pure social norms at the other, and effort somewhere along this spectrum? What, we wondered, might happen in a nonmonetary exchange involving only effort? Would effort undermine social norms in the same way that financial transactions do? Does an exchange of effort keep the social norms intact, similar to the effect of not mentioning money at all? Or might it fall somewhere in the middle of this spectrum?

To explore this notion, we set up a new experiment. This time, we had a research assistant roam around the MIT Media Laboratory with a tray that was always stacked with fifty Lindt truffles. In the "free" condition, she simply asked people, "Would you like some chocolates?" (Note the plural, which indicates that it would be acceptable to take more than one.) In the "monetary" condition, she asked, "Would you like some chocolates? The cost is one cent each." Finally, in the "effort" condition, she handed people a stack of pages with random arrangements of printed letters. For every pair of *s*'s they found, she said, they could have a Lindt truffle (but they did not have to take one). They could work as long as they wanted, putting in as much or as little effort as they wished. (There were well over fifty pairs of *s*'s among all the sheets of letters, and it was very easy to spot them.)

The apparently voracious people in the monetary condition took an average of 30 truffles each. Those in the free condition took a polite average of 1.5. And how do you think effort-as-payment for truffles went over? This group fell somewhere in the middle, but closer to the free condition: our participants took an average of 8.6 truffles each in exchange for finding pairs of *s*'s (or an average of about 21 fewer than those in the monetary condition).

These results suggest that effort falls somewhere in the middle of the range. It does not produce the same level of social self-consciousness that free does, but participants did seem to consider the implications of their actions on others when they decided how many truffles to take. We found that when effort is part of the equation, it manages to keep a large part of the social norms, though by no means all of it. As it turns out, the old maxim "Time is money"—or, in our case, "Effort is money"—is not exactly correct. Perhaps a more accurate reframing of our findings would be that effort is somewhere on the spectrum between market and social norms.

The main lesson here is that because exchanges involving effort can

maintain social norms to a larger degree relative to financial exchanges, we might want to think about how to get people to switch from paying for services to investing more of their own efforts. As we go about our daily lives, we are often asked to invest effort in recycling, spending time on a neighborhood watch, helping in our kids' schools, volunteering in a soup kitchen, and much more. In each of these cases, one could argue that taking part in these activities makes little economic sense. Why not pay someone to recycle for us, watch our neighborhood, help in our kids' schools, or hand out food in the soup kitchen? Sure, it might be economically inefficient, but investing effort rather than cash might help keep us in the domain of social norms and consequently take into account the welfare of others.

FOR THE MOST part in this chapter, I've discussed instances where prices change from something to nothing. Of course, some things that are generally free or are considered a common resource can be relocated into the realm of market forces. For instance, carbon emissions trading is an area where we ought to consider the intersection between social and market norms.* "Cap and Trade" is a program of economic incentives designed to encourage industries and companies to pollute less; the less they pollute, the fewer pollution allowances they have to buy. Moreover, if companies don't use all their allowances, they can profit from their cleanliness by selling their extra allowances to companies that pollute more. It's virtue that pays!

However, in light of the experiments described in this chapter (as well as those in Chapter 4), we might want to consider the dark side of putting a price on pollution. If a company can be charged for spewing poisons into the environment, it might well decide, after a cost-benefit analysis, that it can go ahead and pollute a lot more. Once pollution is a market and companies pay for their right to pollute, morality and concern for the environment are nonissues. On the other hand, if pollution is something that cannot be purchased or traded, it would more naturally fall into the domain of social norms.

To be sure, if we want to place pollution under the control of social norms, we can't stand back and hope that people will start caring. We need to make pollution into an easily measurable and observable quantity and get people to pay attention to it and understand its importance. We could, for example, publically post the pollutant amounts of different countries, states, and companies together with their environmental impact. We could include this information on companies' financial statements to their shareholders or maybe force companies to post it on their products, much as we do for nutritional information on packaged food.

I'm not saying that Cap and Trade is necessarily a bad idea, but I do think that when public policy or environmental issues are at stake, our task is to figure out which of the two—social or market norms—will produce the most desirable outcome. In particular, policy makers should be careful not to add market norms that could undermine the social ones.

NOW THAT WE'VE learned how social norms get people to care less about their own selfish goals and pay more attention to the welfare of others, you might expect me to propose a brilliant idea for injecting more social norms and civility into the Filene's Basement "Running of the Brides." I wish I had a solution for getting

these women to behave in a more considerate or at least less violent way. But the haunting memories of watching the live event suggest to me that getting a future bride to concentrate on an abstract idea like “other people” as opposed to the concrete reality of a discounted wedding gown might be nearly impossible. (For weeks afterward, I would look into the faces of my female friends and wonder whether they, too, were capable of trampling each other in an abject act of retail lust.)

And why, you might ask, am I so easily giving up on this social science challenge? Because I suspect that for social norms to operate, people cannot be at their most emotionally piqued state. When you’re focused, mind and body, on one highly emotional objective—grabbing that wedding dress—it’s hard to factor in others’ well-being. As we will see in the next chapter, when emotions run high, social norms inevitably get trampled like so many Vera Wang veils.

CHAPTER 6

The Influence of Arousal

Why Hot Is Much Hotter Than We Realize

Ask most twentysomething male college students whether they would ever attempt unprotected sex and they will quickly recite chapter and verse about the risk of dreaded diseases and pregnancy. Ask them in any dispassionate circumstances—while they are doing homework or listening to a lecture—whether they'd enjoy being spanked, or enjoy sex in a threesome with another man, and they'll wince. No way, they'd tell you. Furthermore, they'd narrow their eyes at you and think, What kind of sicko are you anyhow, asking these questions in the first place?

In 2001, while I was visiting Berkeley for the year, my friend, academic hero, and longtime collaborator George Loewenstein and I invited a few bright students to help us understand the degree to which rational, intelligent people can predict how their attitudes will change when they are in an impassioned state. In order to make this study realistic, we needed to measure the participants' responses while they were smack in the midst of such an emotional state. We could have made our participants feel angry or hungry, frustrated or annoyed. But we preferred to have them experience a pleasurable emotion.

We chose to study decision making under sexual arousal—not because we had kinky predilections ourselves, but because understanding the impact of arousal on behavior might help society grapple with some of its most difficult problems, such as teen pregnancy and the spread of HIV-AIDS. There are sexual motivations everywhere we look, and yet we understand very little about how these influence our decision making.

Moreover, since we wanted to understand whether participants would be able to predict how they would behave in a particular emotional state, the emotion needed to be one that was already quite familiar to them. That made our decision easy. If there's anything predictable and familiar about twentysomething male college students, it's the regularity with which they experience sexual arousal.

ROY, AN AFFABLE, studious biology major at Berkeley, is in a sweat—and not over finals. Propped up in the single bed of his darkened dorm room, he's masturbating rapidly with his right hand. With his left, he's using a one-handed keyboard to manipulate a Saran-wrapped laptop computer. As he idles through pictures of buxom naked women lolling around in various erotic poses, his heart pounds ever more loudly in his chest.

As he becomes increasingly excited, Roy adjusts the "arousal meter" on the computer screen upward. As he reaches the bright red "high" zone, a question pops up on the screen:

Could you enjoy sex with someone you hated?

Roy moves his left hand to a scale that ranges from "no" to "yes" and taps his answer. The next question appears: "Would you slip a woman a drug to increase the chance that she would have sex with you?"

Again, Roy selects his answer, and a new question pops up. "Would you always use a condom?"

BERKELEY ITSELF IS a dichotomous place. It was a site of antiestablishment riots in the 1960s, and people in the Bay Area snarkily refer to the famously left-of-center city as the "People's Republic of Berkeley." But the large campus itself draws a surprisingly conformist population of top-level students. In a survey of incoming freshmen in 2004, only 51.2 percent of the respondents thought of themselves as liberal. More than one-third (36 percent) deemed their views middle-of-the-road, and 12 percent claimed to be conservatives. To my surprise, when I arrived at Berkeley, I found that the students were in general not very wild, rebellious, or likely to take risks.

The ads we posted around Sproul Plaza read as follows: "Wanted: Male research participants, heterosexual, 18 years-plus, for a study on decision making and arousal." The ad noted that the experimental sessions would demand about an hour of the participants' time, that the participants would be paid $10 per session, and that the experiments could involve sexually arousing material. Those interested in applying could respond to Mike, the research assistant, by e-mail.

For this study, we decided to seek out only men. In terms of sex, their wiring is a lot simpler than that of women (as we concluded after much discussion among ourselves and our assistants, both male and female). A copy of *Playboy* and a darkened room were about all we'd need for a high degree of success.

Another concern was getting the project approved at MIT's Sloan School of Management (where I had my primary appointment). This was an ordeal in itself. Before allowing the research to begin, Dean Richard Schmalensee assigned a committee, consisting mostly of women, to examine the project. This committee had several concerns. What if a participant uncovered repressed memories of sexual abuse as a result of the research? Suppose a participant found that he or she was a sex addict? Their questions seemed unwarranted to me, since any college student with a computer and an Internet connection can get hold of the most graphic pornography imaginable.

Although the business school was stymied by this project, I was fortunate to have a position at MIT's Media Lab as well, and Walter Bender, who was the head of the lab, happily approved the project. I was on my way. But my experience with MIT's Sloan School made it clear that even half a century after Kinsey, and despite its substantial importance, sex is still largely a taboo subject for a study—at least at some institutions.

IN ANY CASE, our ads went out; and, college men being what they are, we soon had a long list of hearty fellows awaiting the chance to participate—including Roy.

Roy, in fact, was typical of most of the 25 participants in our study. Born

and raised in San Francisco, he was accomplished, intelligent, and kind—the type of kid every prospective mother-in-law dreams of. Roy played Chopin études on the piano and liked to dance to techno music. He had earned straight A's throughout high school, where he was captain of the varsity volleyball team. He sympathized with libertarians and tended to vote Republican. Friendly and amiable, he had a steady girlfriend who he'd been dating for a year. He planned to go to medical school and had a weakness for spicy California-roll sushi and for the salads at Cafe Intermezzo.

Roy met with our student research assistant, Mike, at Strada coffee shop—Berkeley's patio-style percolator for many an intellectual thought, including the idea for the solution to Fermat's last theorem. Mike was slender and tall, with short hair, an artistic air, and an engaging smile.

Mike shook hands with Roy, and they sat down. "Thanks for answering our ad, Roy," Mike said, pulling out a few sheets of paper and placing them on the table. "First, let's go over the consent forms."

Mike intoned the ritual decree: The study was about decision making and sexual arousal. Participation was voluntary. Data would be confidential. Participants had the right to contact the committee in charge of protecting the rights of those participating in experiments, and so on.

Roy nodded and nodded. You couldn't find a more agreeable participant.

"You can stop the experiment at any time," Mike concluded. "Everything understood?"

"Yes," Roy said. He grabbed a pen and signed. Mike shook his hand.

"Great!" Mike took a cloth bag out of his knapsack. "Here's what's going to happen." He unwrapped an Apple iBook computer and opened it up. In addition to the standard keyboard, Roy saw a 12-key multicolored keypad.

"It's a specially equipped computer," Mike explained. "Please use only this keypad to respond." He touched the keys on the colored pad. "We'll give you a code to enter, and this code will let you start the experiment. During the session, you'll be asked a series of questions to which you can answer on a scale ranging between 'no' and 'yes.' If you think you would like the activity described in the question, answer 'yes,' and if you think you would not, answer 'no.' Remember that you're being asked to predict how you would behave and what kind of activities you would like when aroused."

Roy nodded.

"We'll ask you to sit in your bed, and set the computer up on a chair on the left side of your bed, in clear sight and reach of your bed," Mike went on. "Place the keypad next to you so that you can use it without any difficulty, and be sure you're alone."

Roy's eyes twinkled a little.

"When you finish with the session, e-mail me and we will meet again, and you'll get your ten bucks."

Mike didn't tell Roy about the questions themselves. The session started by asking Roy to imagine that he was sexually aroused, and to answer all the questions as he would if he were aroused. One set of questions asked about sexual preferences. Would he, for example, find women's shoes erotic? Could he imagine

being attracted to a 50-year-old woman? Could it be fun to have sex with someone who was extremely fat? Could having sex with someone he hated be enjoyable? Would it be fun to get tied up or to tie someone else up? Could "just kissing" be frustrating?

A second set of questions asked about the likelihood of engaging in immoral behaviors such as date rape. Would Roy tell a woman that he loved her to increase the chance that she would have sex with him? Would he encourage a date to drink to increase the chance that she would have sex with him? Would he keep trying to have sex after a date had said "no"?

A third set of questions asked about Roy's likelihood of engaging in behaviors related to unsafe sex. Does a condom decrease sexual pleasure? Would he always use a condom if he didn't know the sexual history of a new sexual partner? Would he use a condom even if he was afraid that a woman might change her mind while he went to get it?*

A few days later, having answered the questions in his "cold," rational state, Roy met again with Mike.

"Those were some interesting questions," Roy noted.

"Yes, I know," Mike said coolly. "Kinsey had nothing on us. By the way, we have another set of experimental sessions. Would you be interested in participating again?"

Roy smiled a little, shrugged, and nodded.

Mike shoved a few pages toward him. "This time we're asking you to sign the same consent form, but the next task will be slightly different. The next session will be very much the same as the last one, but this time we want you to get yourself into an excited state by viewing a set of arousing pictures and masturbating. What we want you to do is arouse yourself to a high level, but not to ejaculate. In case you do, though, the computer will be protected."

Mike pulled out the Apple iBook. This time the keyboard and the screen were covered with a thin layer of Saran wrap.

Roy made a face. "I didn't know computers could get pregnant."

"Not a chance," Mike laughed. "This one had its tubes tied. But we like to keep them clean."

Mike explained that Roy would browse through a series of erotic pictures on the computer to help him get to the right level of arousal; then he would answer the same questions as before.

WITHIN THREE MONTHS, some fine Berkeley undergraduate students had undergone a variety of sessions in different orders. In the set of sessions conducted when they were in a cold, dispassionate state, they predicted what their sexual and moral decisions would be if they were aroused. In the set of sessions conducted when they were in a hot, aroused state, they also predicted their decisions—but this time, since they were actually in the grip of passion, they were presumably more aware of their preferences in that state. When the study was completed, the conclusions were consistent and clear—overwhelmingly clear, frighteningly clear.

In every case, our bright young participants answered the questions very

differently when they were aroused from when they were in a "cold" state. Across the 19 questions about sexual preferences, when Roy and all the other participants were aroused they predicted that their desire to engage in a variety of somewhat odd sexual activities would be nearly twice as high as (72 percent higher than) they had predicted when they were cold. For example, the idea of enjoying contact with animals was more than twice as appealing when they were in a state of arousal as when they were in a cold state. In the five questions about their propensity to engage in immoral activities, when they were aroused they predicted their propensity to be more than twice as high as (136 percent higher than) they had predicted in the cold state. Similarly, in the set of questions about using condoms, and despite the warnings that had been hammered into them over the years about the importance of condoms, they were 25 percent more likely in the aroused state than in the cold state to predict that they would forego condoms. In all these cases they failed to predict the influence of arousal on their sexual preferences, morality, and approach to safe sex.

The results showed that when Roy and the other participants were in a cold, rational, superego-driven state, they respected women; they were not particularly attracted to the odd sexual activities we asked them about; they always took the moral high ground; and they expected that they would always use a condom. They thought that they understood themselves, their preferences, and what actions they were capable of. But as it turned out, they completely underestimated their reactions.

No matter how we looked at the numbers, it was clear that the magnitude of underprediction by the participants was substantial. Across the board, they revealed in their unaroused state that they themselves did not know what they were like once aroused. Prevention, protection, conservatism, and morality disappeared completely from the radar screen. They were simply unable to predict the degree to which passion would change them.*

IMAGINE WAKING UP one morning, looking in the mirror, and discovering that someone else—something alien but human—has taken over your body. You're uglier, shorter, hairier; your lips are thinner, your incisors are longer, your nails are filthy, your face is flatter. Two cold, reptilian eyes gaze back at you. You long to smash something, rape someone. You are not you. You are a monster.

Beset by this nightmarish vision, Robert Louis Stevenson screamed in his sleep in the early hours of an autumn morning in 1885. Immediately after his wife awoke him, he set to work on what he called a "fine bogey tale"—*Dr. Jekyll and Mr. Hyde*—in which he said, "Man is not truly one, but truly two." The book was an overnight success, and no wonder. The story captivated the imagination of Victorians, who were fascinated with the dichotomy between repressive propriety —represented by the mild-mannered scientist Dr. Jekyll—and uncontrollable passion, embodied in the murderous Mr. Hyde. Dr. Jekyll thought he understood how to control himself. But when Mr. Hyde took over, look out.

The story was frightening and imaginative, but it wasn't new. Long before Sophocles's *Oedipus Rex* and Shakespeare's *Macbeth*, the war between interior good and evil had been the stuff of myth, religion, and literature. In Freudian terms, each of us houses a dark self, an id, a brute that can unpredictably wrest control

away from the superego. Thus a pleasant, friendly neighbor, seized by road rage, crashes his car into a semi. A teenager grabs a gun and shoots his friends. A priest rapes a boy. All these otherwise good people assume that they understand themselves. But in the heat of passion, suddenly, with the flip of some interior switch, everything changes.

Our experiment at Berkeley revealed not just the old story that we are all like Jekyll and Hyde, but also something new—that every one of us, regardless of how "good" we are, underpredicts the effect of passion on our behavior. In every case, the participants in our experiment got it wrong. Even the most brilliant and rational person, in the heat of passion, seems to be absolutely and completely divorced from the person he thought he was. Moreover, it is not just that people make wrong predictions about themselves—their predictions are wrong by a large margin.

Most of the time, according to the results of the study, Roy is smart, decent, reasonable, kind, and trustworthy. His frontal lobes are fully functioning, and he is in control of his behavior. But when he's in a state of sexual arousal and the reptilian brain takes over, he becomes unrecognizable to himself.

Roy thinks he knows how he will behave in an aroused state, but his understanding is limited. He doesn't truly understand that as his sexual motivation becomes more intense, he may throw caution to the wind. He may risk sexually transmitted diseases and unwanted pregnancies in order to achieve sexual gratification. When he is gripped by passion, his emotions may blur the boundary between what is right and what is wrong. In fact, he doesn't have a clue to how consistently wild he really is, for when he is in one state and tries to predict his behavior in another state, he gets it wrong.

Moreover, the study suggested that our inability to understand ourselves in a different emotional state does not seem to improve with experience; we get it wrong even if we spend as much time in this state as our Berkeley students spend sexually aroused. Sexual arousal is familiar, personal, very human, and utterly commonplace. Even so, we all systematically underpredict the degree to which arousal completely negates our superego, and the way emotions can take control of our behavior.

WHAT HAPPENS, THEN, when our irrational self comes alive in an emotional place that we think is familiar but in fact is unfamiliar? If we fail to really understand ourselves, is it possible to somehow predict how we or others will behave when "out of our heads"—when we're really angry, hungry, frightened, or sexually aroused? Is it possible to do something about this?

The answers to these questions are profound, for they indicate that we must be wary of situations in which our Mr. Hyde may take over. When the boss criticizes us publicly, we might be tempted to respond with a vehement e-mail. But wouldn't we be better off putting our reply in the "draft" folder for a few days? When we are smitten by a sports car after a test-drive with the wind in our hair, shouldn't we take a break—and discuss our spouse's plan to buy a minivan—before signing a contract to buy the car?

Here are a few more examples of ways to protect ourselves from ourselves:

Safe Sex

Many parents and teenagers, while in a cold, rational, Dr. Jekyll state, tend to believe that the mere promise of abstinence—commonly known as "Just say no"—is sufficient protection against sexually transmitted diseases and unwanted pregnancies. Assuming that this levelheaded thought will prevail even when emotions reach the boiling point, the advocates of "just saying no" see no reason to carry a condom with them. But as our study shows, in the heat of passion, we are all in danger of switching from "Just say no" to "Yes!" in a heartbeat; and if no condom is available, we are likely to say yes, regardless of the dangers.

What does this suggest? First, widespread availability of condoms is essential. We should not decide in a cool state whether or not to bring condoms; they must be there just in case. Second, unless we understand how we might react in an emotional state, we will not be able to predict this transformation. For teenagers, this problem is most likely exacerbated, and thus sex education should focus less on the physiology and biology of the reproductive system, and more on strategies to deal with the emotions that accompany sexual arousal. Third, we must admit that carrying condoms and even vaguely understanding the emotional firestorm of sexual arousal may not be enough.

There are most likely many situations where teenagers simply won't be able to cope with their emotions. A better strategy, for those who want to guarantee that teenagers avoid sex, is to teach teenagers that they must walk away from the fire of passion before they are close enough to be drawn in. Accepting this advice might not be easy, but our results suggest that it is easier for them to fight temptation before it arises than after it has started to lure them in. In other words, avoiding temptation altogether is easier than overcoming it.

To be sure, this sounds a lot like the "Just say no" campaign, which urges teenagers to walk away from sex when tempted. But the difference is that "Just say no" assumes we can turn off passion at will, at any point, whereas our study shows this assumption to be false. If we put aside the debate on the pros and cons of teenage sex, what is clear is that if we want to help teenagers avoid sex, sexually transmitted diseases, and unwanted pregnancies, we have two strategies. Either we can teach them how to say no *before* any temptation takes hold, and before a situation becomes impossible to resist; or alternatively, we can get them prepared to deal with the consequences of saying yes in the heat of passion (by carrying a condom, for example). One thing is sure: if we don't teach our young people how to deal with sex when they are half out of their minds, we are not only fooling them; we're fooling ourselves as well. Whatever lessons we teach them, we need to help them understand that they will react differently when they are calm and cool from when their hormones are raging at fever pitch (and of course the same also applies to our own behavior).

Safe Driving

Similarly, we need to teach teenagers (and everyone else) not to drive when their emotions are at a boil. It's not just inexperience and hormones that make so many teenagers crash their own or their parents' cars. It's also the car full of laughing friends, with the CD player blaring at an adrenaline-pumping decibel level, and the driver's right hand searching for the french fries or his girlfriend's knee. Who's

thinking about risk in that situation? Probably no one. A recent study found that a teenager driving alone was 40 percent more likely to get into an accident than an adult. But with one other teenager in the car, the percentage was twice that—and with a third teenager along for the ride, the percentage doubled again.[6]

To react to this, we need an intervention that does not rely on the premise that teenagers will remember how they wanted to behave while in a cold state (or how their parents wanted them to behave) and follow these guidelines even when they are in a hot state. Why not build into cars precautionary devices to foil teenagers' behavior? Such cars might be equipped with a modified OnStar system that the teenager and the parents configure in a cold state. If a car exceeds 65 miles per hour on the highway, or more than 40 miles per hour in a residential zone, for example, there will be consequences. If the car exceeds the speed limit or begins to make erratic turns, the radio might switch from 2Pac to Schumann's Second Symphony (this would slow most teenagers). Or the car might blast the air conditioning in winter, switch on the heat in summer, or automatically call Mom (a real downer if the driver's friends are present). With these substantial and immediate consequences in mind, then, the driver and his or her friends would realize that it's time for Mr. Hyde to move over and let Dr. Jekyll drive.

This is not at all far-fetched. Modern cars are already full of computers that control the fuel injection, the climate system, and the sound system. Cars equipped with OnStar are already linked to a wireless network. With today's technology, it would be a simple matter for a car to automatically call Mom.

Better Life Decisions

Not uncommonly, women who are pregnant for the first time tell their doctors, before the onset of labor, that they will refuse any kind of painkiller. The decision made in their cold state is admirable, but they make this decision when they can't imagine the pain that can come with childbirth (let alone the challenges of child rearing). After all is said and done, they may wish they'd gone for the epidural.

With this in mind, Sumi (my lovely wife) and I, readying ourselves for the birth of our first child, Amit, decided to test our mettle before making any decisions about using an epidural. To do this, Sumi plunged her hands into a bucket of ice for two minutes (we did this on the advice of our birth coach, who swore to us that the resulting pain would be similar to the pain of childbirth), while I coached her breathing. If Sumi was unable to bear the pain of this experience, we figured, she'd probably want painkillers when she was going through the actual birth. After two minutes of holding her hands in the ice bucket, Sumi clearly understood the appeal of an epidural. During the birth itself, any ounce of love Sumi ever had for her husband was completely transferred to the anesthesiologist, who produced the epidural at the critical point. (With our second child, we made it to the hospital about two minutes before Neta was born, so Sumi did end up experiencing an analgesic-free birth after all.)

LOOKING FROM ONE emotional state to another is difficult. It's not always possible; and as Sumi learned it can be painful. But to make informed decisions we need to somehow experience and understand the emotional state we will be in at the other side of the experience. Learning how to bridge this gap is essential to

making some of the important decisions of our lives.

It is unlikely that we would move to a different city without asking friends who live there how they like it, or even choose to see a film without reading some reviews. Isn't it strange that we invest so little in learning about both sides of ourselves? Why should we reserve this subject for psychology classes when failure to understand it can bring about repeated failures in so many aspects of our lives? We need to explore the two sides of ourselves; we need to understand the cold state and the hot state; we need to see how the gap between the hot and cold states benefits our lives, and where it leads us astray.

What did our experiments suggest? It may be that our models of human behavior need to be rethought. Perhaps there is no such thing as a fully integrated human being. We may, in fact, be an agglomeration of multiple selves. Although there is nothing much we can do to get our Dr. Jekyll to fully appreciate the strength of our Mr. Hyde, perhaps just being aware that we are prone to making the wrong decisions when gripped by intense emotion may help us, in some way, to apply our knowledge of our "Hyde" selves to our daily activities.

How can we try to force our "Hyde" self to behave better? This is what Chapter 7 is about.

APPENDIX: CHAPTER 5

A complete list of the questions we asked, with the mean response and percentage differences. Each question was presented on a visual-analog scale that stretched between "no" on the left (zero) to "possibly" in the middle (50) to "yes" on the right (100).

TABLE 1
RATE THE ATTRACTIVENESS OF DIFFERENT ACTIVITIES

Question	Difference expressed as a percent
Are women's shoes erotic?	[illegible]
Can you imagine being attracted to a 12-year-old girl?	[illegible]
Can you imagine having sex with a 40-year-old woman?	[illegible]
Can you imagine having sex with a 50-year-old woman?	[illegible]
Can you imagine having sex with a 60-year-old woman?	[illegible]
Can you imagine having sex with a man?	[illegible]
Could it be fun to have sex with someone who was extremely fat?	[illegible]
Could you enjoy having sex with someone you hated?	[illegible]
If you were attracted to a woman and she proposed a threesome with a man, would you do it?	[illegible]
Is a woman sexy when she's sweating?	[illegible]
Is the smell of cigarette smoke arousing?	[illegible]
Would it be fun to get tied up by your sexual partner?	[illegible]
Would it be fun to tie up your sexual partner?	[illegible]
Would it be fun to watch an attractive woman urinating?	[illegible]
Would you find it exciting to spank your sexual partner?	[illegible]
Would you find it exciting to get spanked by an attractive woman?	[illegible]
Would you find it exciting to have anal sex?	[illegible]
Can you imagine getting sexually excited by contact with an animal?	[illegible]

Is just kissing frustrating?	68	167

TABLE 2
RATE THE LIKELIHOOD OF ENGAGING IN IMMORAL BEHAVIORS LIKE DATE RAPE (A STRICT ORDER OF SEVERITY IS NOT IMPLIED)

Question	Difference, percent	Number surveyed
Would you take a date to a fancy restaurant to increase your chance of having sex with her?	20	167
Would you tell a woman that you loved her to increase the chance that she would have sex with you?	50	167
Would you encourage your date to drink to increase the chance that she would have sex with you?	68	167
Would you keep trying to have sex after your date says “no”?	25	167
Would you slip a woman a drug to increase the chance that she would have sex with you?	26	167

TABLE 3
RATE YOUR TENDENCY TO USE, AND OUTCOMES OF NOT USING, BIRTH CONTROL

Question	Difference, percent	Number surveyed
Birth control is the woman’s responsibility.	24	167
A condom decreases sexual pleasure.	68	167
A condom interferes with sexual spontaneity.	28	167
Would you always use a condom if you didn’t know the sexual history of a new sexual partner?	82	167
Would you use a condom even if you were afraid that a woman might change her mind while you went to get it?	66	167

CHAPTER 7

The Problem of Procrastination and Self-Control

Why We Can't Make Ourselves Do
What We Want to Do

Onto the American scene, populated by big homes, big cars, and big-screen plasma televisions, comes another big phenomenon: the biggest decline in the personal savings rate since the Great Depression.

Go back 25 years, and double-digit savings rates were the norm. As recently as 1994 the savings rate was nearly five percent. But by 2006 the savings rate had fallen below zero—to negative one percent. Americans were not only not saving; they were spending more than they earned. Europeans do a lot better—they save an average of 20 percent. Japan's rate is 25 percent. China's is 50 percent. So what's up with America?

I suppose one answer is that Americans have succumbed to rampant consumerism. Go back to a home built before we had to have everything, for instance, and check out the size of the closets. Our house in Cambridge, Massachusetts, for example, was built in 1890. It has no closets whatsoever. Houses in the 1940s had closets barely big enough to stand in. The closet of the 1970s was a bit larger, perhaps deep enough for a fondue pot, a box of eight-track tapes, and a few disco dresses. But the closet of today is a different breed. "Walk-in closet" means that you can literally walk in for quite a distance. And no matter how deep these closets are, Americans have found ways to fill them right up to the closet door.

Another answer—the other half of the problem—is the recent explosion in consumer credit. The average American family now has six credit cards (in 2005 alone, Americans received 6 billion direct-mail solicitations for credit cards). Frighteningly, the average family debt on these cards is about $9,000; and seven in 10 households borrow on credit cards to cover such basic living expenses as food, utilities, and clothing.

So wouldn't it just be wiser if Americans learned to save, as in the old days, and as the rest of the world does, by diverting some cash to the cookie jar, and delaying some purchases until we can really afford them? Why can't we save part of our paychecks, as we know we should? Why can't we resist those new purchases? Why can't we exert some good old-fashioned self-control?

The road to hell, they say, is paved with good intentions. And most of us know what that's all about. We promise to save for retirement, but we spend the money on a vacation. We vow to diet, but we surrender to the allure of the dessert cart. We promise to have our cholesterol checked regularly, and then we cancel our appointment.

How much do we lose when our fleeting impulses deflect us from our long-term goals? How much is our health affected by those missed appointments and our lack of exercise? How much is our wealth reduced when we forget our vow to save more and consume less? Why do we lose the fight against procrastination so frequently?

IN CHAPTER 6 we discussed how emotions grab hold of us and make us view the world from a different perspective. Procrastination (from the Latin *pro*, meaning *for*; and *cras*, meaning *tomorrow*) is rooted in the same kind of problem. When we promise to save our money, we are in a cool state. When we promise to exercise and watch our diet, again we're cool. But then the lava flow of hot emotion comes rushing in: just when we promise to save, we see a new car, a mountain bike, or a pair of shoes that we must have. Just when we plan to exercise regularly, we find a reason to sit all day in front of the television. And as for the diet? I'll take that slice of chocolate cake and begin the diet in earnest tomorrow. Giving up on our long-term goals for immediate gratification, my friends, is procrastination.

As a university professor, I'm all too familiar with procrastination. At the beginning of every semester my students make heroic promises to themselves—vowing to read their assignments on time, submit their papers on time, and in general, stay on top of things. And every semester I've watched as temptation takes them out on a date, over to the student union for a meeting, and off on a ski trip in the mountains—while their workload falls farther and farther behind. In the end, they wind up impressing me, not with their punctuality, but with their creativity—inventing stories, excuses, and family tragedies to explain their tardiness. (Why do family tragedies generally occur during the last two weeks of the semester?)

After I'd been teaching at MIT for a few years, my colleague Klaus Wertenbroch (a professor at INSEAD, a business school with campuses in France and Singapore) and I decided to work up a few studies that might get to the root of the problem, and just maybe offer a fix for this common human weakness. Our guinea pigs this time would be the delightful students in my class on consumer behavior.

As they settled into their chairs that first morning, full of anticipation (and, no doubt, with resolutions to stay on top of their class assignments), the students listened to me review the syllabus for the course. There would be three main papers over the 12-week semester, I explained. Together, these papers would constitute much of their final grade.

"And what are the deadlines?" asked one of them, waving his hand from the back. I smiled. "You can hand in the papers at any time before the end of the semester," I replied. "It's entirely up to you." The students looked back blankly.

"Here's the deal," I explained. "By the end of the week, you must commit to a deadline date for each paper. Once you set your deadlines, they can't be changed." Late papers, I added, would be penalized at the rate of one percent off the grade for each day late. The students could always turn in their papers before their deadlines without penalty, of course, but since I wouldn't be reading any of them until the end of the semester, there would be no particular advantage in terms of grades for doing so.

In other words, the ball was in their court. Would they have the self-control to play the game?

"But Professor Ariely," asked Gaurav, a clever master's student with a charming Indian accent, "given these instructions and incentives, wouldn't it make sense for us to select the last date possible?"

"You can do that," I replied. "If you find that it makes sense, by all means do it."

Under these conditions, what would you have done?

I promise to submit paper 1 on week ———
I promise to submit paper 2 on week ———
I promise to submit paper 3 on week ———

What deadlines did the students pick for themselves? A perfectly rational student would follow Gaurav's advice and set all the deadlines for the last day of class—after all, it was always possible to submit papers earlier without a penalty, so why take a chance and select an earlier deadline than needed? Delaying the deadlines to the end was clearly the best decision if students were perfectly rational. But what if the students are not rational? What if they succumb to temptation and are prone to procrastination? What if they realize their weakness? If the students are not rational, and they know it, they could use the deadlines to force themselves to behave better. They could set early deadlines and by doing so force themselves to start working on the projects earlier in the semester.

What did my students do? They used the scheduling tool I provided them with and spaced the timing of their papers across the whole semester. This is fine and good, as it suggests that the students realize their problems with procrastination and that if given the right opportunities they try to control themselves—but the main question is whether the tool was indeed helpful in improving their grades. To find out about this, we had to conduct other variations of the same experiments in other classes and compare the quality of papers across the different conditions (classes).

NOW THAT I had Gaurav and his classmates choosing their individual deadlines, I went to my other two classes—with markedly different deals. In the second class, I told the students that they would have no deadlines at all during the semester. They merely needed to submit their papers by the end of the last class. They could turn the papers in early, of course, but there was no grade benefit to doing so. I suppose they should have been happy: I had given them complete flexibility and freedom of choice. Not only that, but they also had the lowest risk of being penalized for missing an intermediate deadline.

The third class received what might be called a dictatorial treatment: I dictated three deadlines for the three papers, set at the fourth, eighth, and twelfth weeks. These were my marching orders, and they left no room for choice or flexibility.

Of these three classes, which do you think achieved the best final grades? Was it Gaurav and his classmates, who had some flexibility? Or the second class,

which had a single deadline at the end, and thus complete flexibility? Or the third class, which had its deadlines dictated from above, and therefore had no flexibility? Which class do you predict did worst?

When the semester was over, Jose Silva, the teaching assistant for the classes (himself an expert on procrastination and currently a professor at the University of California at Berkeley), returned the papers to the students. We could at last compare the grades across the three different deadline conditions. We found that the students in the class with the three firm deadlines got the best grades; the class in which I set no deadlines at all (except for the final deadline) had the worst grades; and the class in which Gaurav and his classmates were allowed to choose their own three deadlines (but with penalties for failing to meet them) finished in the middle, in terms of their grades for the three papers and their final grade.

What do these results suggest? First, that students do procrastinate (big news); and second, that tightly restricting their freedom (equally spaced deadlines, imposed from above) is the best cure for procrastination. But the biggest revelation is that simply offering the students a tool by which they could precommit to deadlines helped them achieve better grades.

What this finding implies is that the students generally understood their problem with procrastination and took action to fight it when they were given the opportunity to do so, achieving relative success in improving their grades. But why were the grades in the self-imposed deadlines condition not as good as the grades in the dictatorial (externally imposed) deadlines condition? My feeling is this: not everyone understands their tendency to procrastinate, and even those who do recognize their tendency to procrastinate may not understand their problem completely. Yes, people may set deadlines for themselves, but not necessarily the deadlines that are best for getting the best performance.

When I looked at the deadlines set by the students in Gaurav's class, this was indeed the case. Although the vast majority of the students in this class spaced their deadlines substantially (and got grades that were as good as those earned by students in the dictatorial condition), some did not space their deadlines much, and a few did not space their deadlines at all. These students who did not space their deadlines sufficiently pulled the average grades of this class down. Without properly spaced deadlines—deadlines that would have forced the students to start working on their papers earlier in the semester—the final work was generally rushed and poorly written (even without the extra penalty of one percent off the grade for each day of delay).

Interestingly, these results suggest that although almost everyone has problems with procrastination, those who recognize and admit their weakness are in a better position to utilize available tools for precommitment and by doing so, help themselves overcome it.

SO THAT WAS my experience with my students. What does it have to do with everyday life? A lot, I think. Resisting temptation and instilling self-control are general human goals, and repeatedly failing to achieve them is a source of much of our misery. When I look around, I see people trying their best to do the right thing, whether they are dieters vowing to avoid a tempting dessert tray or

families vowing to spend less and save more. The struggle for control is all around us. We see it in books and magazines. Radio and television airwaves are choked with messages of self-improvement and help.

And yet, for all this electronic chatter and focus in print, we find ourselves again and again in the same predicament as my students—failing over and over to reach our long-term goals. Why? Because without precommitments, we keep on falling for temptation.

What's the alternative? From the experiments that I have described above, the most obvious conclusion is that when an authoritative "external voice" gives the orders, most of us will jump to attention. After all, the students for whom I set the deadlines—for whom I provided the "parental" voice—did best. Of course, barking orders, while very effective, may not always be feasible or desirable. What's a good compromise? It seems that the best course might be to give people an opportunity to commit up front to their preferred path of action. This approach might not be as effective as the dictatorial treatment, but it can help push us in the right direction (perhaps even more so if we train people to do it, and give them experience in setting their own deadlines).

What's the bottom line? We have problems with self-control, related to immediate and delayed gratification—no doubt there. But each of the problems we face has potential self-control mechanisms, as well. If we can't save from our paycheck, we can take advantage of our employer's automatic deduction option; if we don't have the will to exercise regularly alone, we can make an appointment to exercise in the company of our friends. These are the tools that we can commit to in advance, and they may help us be the kind of people we want to be.

WHAT OTHER PROCRASTINATION problems might precommitment mechanisms solve? Consider health care and consumer debt.

Health Care

Everyone knows that preventive medicine is generally more cost-effective—for both individuals and society—than our current remedial approach. Prevention means getting health exams on a regular basis, before problems develop. But having a colonoscopy or mammogram is an ordeal. Even a cholesterol check, which requires blood to be drawn, is unpleasant. So while our long-term health and longevity depend on undergoing such tests, in the short term we procrastinate and procrastinate and procrastinate.

But can you imagine if we all got the required health exams on time? Think how many serious health problems could be caught if they were diagnosed early. Think how much cost could be cut from health-care spending, and how much misery would be saved in the process.

So how do we fix this problem? Well, we could have a dictatorial solution, in which the state (in the Orwellian sense) would dictate our regular checkups. That approach worked well with my students, who were given a deadline and performed well. In society, no doubt, we would all be healthier if the health police arrived in a van and took procrastinators to the ministry of cholesterol control for blood tests.

This may seem extreme, but think of the other dictates that society imposes on us for our own good. We may receive tickets for jaywalking, and for having our seat belts unsecured. No one thought 20 years ago that smoking would be banned in most public buildings across America, as well as in restaurants and bars, but today it is—with a hefty fine incurred for lighting up. And now we have the movement against trans fats. Should people be deprived of heart-clogging french fries?

Sometimes we strongly support regulations that restrain our self-destructive behaviors, and at other times we have equally strong feelings about our personal freedom. Either way, it's always a trade-off.

But if mandatory health checkups won't be accepted by the public, what about a middle ground, like the self-imposed deadlines I gave to Gaurav and his classmates (the deadlines that offered personal choice, but also had penalties attached for the procrastinators)? This might be the perfect compromise between authoritarianism, on the one hand, and what we have too often in preventive health today—complete freedom to fail.

Suppose your doctor tells you that you need to get your cholesterol checked. That means fasting the night before the blood test, driving to the lab the next morning without breakfast, sitting in a crowded reception room for what seems like hours, and finally, having the nurse come and get you so that she can stick a needle into your arm. Facing those prospects, you immediately begin to procrastinate. But suppose the doctor charged you an up-front $100 deposit for the test, refundable only if you showed up promptly at the appointed time. Would you be more likely to show up for the test?

What if the doctor asked you if you would like to pay this $100 deposit for the test? Would you accept this self-imposed challenge? And if you did, would it make you more likely to show up for the procedure? Suppose the procedure was more complicated: a colonoscopy, for instance. Would you be willing to commit to a $200 deposit, refundable only if you arrived at the appointment on time? If so, you will have replicated the condition that I offered Gaurav's class, a condition that certainly motivated the students to be responsible for their own decisions.

HOW ELSE COULD we defeat procrastination in health care? Suppose we could repackage most of our medical and dental procedures so that they were predictable and easily done. Let me tell you a story that illustrates this idea.

Several years ago, Ford Motor Company struggled to find the best way to get car owners back into the dealerships for routine automobile maintenance. The problem was that the standard Ford automobile had something like 18,000 parts that might need servicing, and unfortunately they didn't all need servicing at the same time (one Ford engineer determined that a particular axle bolt needed inspection every 3,602 miles). And this was just part of the problem: since Ford had more than 20 vehicle types, plus various model years, the servicing of them all was nearly impossible to ponder. All that consumers, as well as service advisers, could do was page through volumes of thick manuals in order to determine what services were needed.

But Ford began to notice something over at the Honda dealerships. Even though the 18,000 or so parts in Honda cars had the same ideal maintenance schedules as the Ford cars, Honda had lumped them all into three "engineering intervals" (for instance, every six months or 5,000 miles, every year or 10,000 miles, and every two years or 25,000 miles). This list was displayed on the wall of the reception room in the service department. All the hundreds of service activities were boiled down to simple, mileage-based service events that were common across all vehicles and model years. The board had every maintenance service activity bundled, sequenced, and priced. Anyone could see when service was due and how much it would cost.

But the bundle board was more than convenient information: It was a true procrastination-buster, as it instructed customers to get their service done at specific times and mileages. It guided them along. And it was so simple that any customer could understand it. Customers were no longer confused. They no longer procrastinated. Servicing their Hondas on time was easy.

Some people at Ford thought this was a great idea, but at first the Ford engineers fought it. They had to be convinced that, yes, drivers could go 9,000 miles without an oil change—but that 5,000 miles would align the oil change with everything else that needed to be done. They had to be convinced that a Mustang and a F-250 Super Duty truck, despite their technological differences, could be put on the same maintenance schedule. They had to be convinced that rebundling their 18,000 maintenance options into three easily scheduled service events—making maintenance as easy as ordering a Value Meal at McDonald's—was not bad engineering, but good customer service (not to mention good business). The winning argument, in fact, was that it is better to have consumers service their vehicles at somewhat compromised intervals than not to service them at all!

In the end, it happened: Ford joined Honda in bundling its services. Procrastination stopped. Ford's service bay, which had been 40 percent vacant, filled up. The dealers made money, and in just three years Ford matched Honda's success in the service bay.

So couldn't we make comprehensive physicals and tests as simple—and, with the addition of self-imposed financial penalties (or better, a "parental" voice), bring the quality of our health way up and at the same time make the overall costs significantly less? The lesson to learn from Ford's experience is that bundling our medical tests (and procedures) so that people remember to do them is far smarter than adhering to an erratic series of health commands that people are unwilling to follow. And so the big question: can we shape America's medical morass and make it as easy as ordering a Happy Meal? Thoreau wrote, "Simplify! Simplify!" And, indeed, simplification is one mark of real genius.

Savings

We could order people to stop spending, as an Orwellian edict. This would be similar to the case of my third group of students, for whom the deadline was dictated by me. But are there cleverer ways to get people to monitor their own spending? A few years ago, for instance, I heard about the "ice glass" method for reducing credit card spending. It's a home remedy for impulsive spending. You

put your credit card into a glass of water and put the glass in the freezer. Then, when you impulsively decide to make a purchase, you must first wait for the ice to thaw before extracting the card. By then, your compulsion to purchase has subsided. (You can't just put the card in the microwave, of course, because then you'd destroy the magnetic strip.)

But here's another approach that is arguably better, and certainly more up-to-date. John Leland wrote a very interesting article in the *New York Times* in which he described a growing trend of self-shame: "When a woman who calls herself Tricia discovered last week that she owed $22,302 on her credit cards, she could not wait to spread the news. Tricia, 29, does not talk to her family or friends about her finances, and says she is ashamed of her personal debt. Yet from the laundry room of her home in northern Michigan, Tricia does something that would have been unthinkable—and impossible—a generation ago: She goes online and posts intimate details of her financial life, including her net worth (now a negative $38,691), the balance and finance charges on her credit cards, and the amount of debt she has paid down ($15,312) since starting the blog about her debt last year."

It is also clear that Tricia's blog is part of a larger trend. Apparently, there are dozens of Web sites (maybe there are thousands by now) devoted to the same kind of debt blogging (from "Poorer than You" poorerthanyou.com and "We're in Debt" wereindebt.com to "Make Love Not Debt" makelovenotdebt.com and Tricia's Web page: bloggingawaydebt.com). Leland noted, "Consumers are asking others to help themselves develop self-control because so many companies are not showing any restraint."[7]

Blogging about overspending is important and useful, but as we saw in the last chapter, on emotions, what we truly need is a method to curb our consumption at the moment of temptation, rather than a way to complain about it after the fact.

What could we do? Could we create something that replicated the conditions of Gaurav's class, with some freedom of choice but built-in boundaries as well? I began to imagine a credit card of a different kind—a *self-control* credit card that would let people restrict their own spending behavior. The users could decide in advance how much money they wanted to spend in each category, in every store, and in every time frame. For instance, users could limit their spending on coffee to $20 every week, and their spending on clothing to $600 every six months. Cardholders could fix their limit for groceries at $200 a week and their entertainment spending at $60 a month, and not allow any spending on candy between two and five PM. What would happen if they surpassed the limit? The cardholders would select their penalties. For instance, they could make the card get rejected; or they could tax themselves and transfer the tax to Habitat for Humanity, a friend, or long-term savings. This system could also implement the "ice glass" method as a cooling-off period for large items; and it could even automatically trigger an e-mail to your spouse, your mother, or a friend:

> Dear Sumi,
> This e-mail is to draw your attention to the fact that your husband, Dan Ariely, who is generally an upright citizen, has exceeded his spending limit

on chocolate of $50 per month by $73.25.
With best wishes,
The self-control credit card team

Now this may sound like a pipe dream, but it isn't. Think about the potential of Smart Cards (thin, palm-size cards that carry impressive computational powers), which are beginning to fill the market. These cards offer the possibility of being customized to each individual's credit needs and helping people manage their credit wisely. Why couldn't a card, for instance, have a spending "governor" (like the governors that limit the top speed on engines) to limit monetary transactions in particular conditions? Why couldn't they have the financial equivalent of a time-release pill, so that consumers could program their cards to dispense their credit to help them behave as they hope they would?

A FEW YEARS ago I was so convinced that a "self-control" credit card was a good idea that I asked for a meeting with one of the major banks. To my delight, this venerable bank responded, and suggested that I come to its corporate headquarters in New York.

I arrived in New York a few weeks later, and after a brief delay at the reception desk, was led into a modern conference room. Peering through the plate glass from on high, I could look down on Manhattan's financial district and a stream of yellow cabs pushing through the rain. Within a few minutes the room had filled with half a dozen high-powered banking executives, including the head of the bank's credit card division.

I began by describing how procrastination causes everyone problems. In the realm of personal finance, I said, it causes us to neglect our savings—while the temptation of easy credit fills our closets with goods that we really don't need. It didn't take long before I saw that I was striking a very personal chord with each of them.

Then I began to describe how Americans have fallen into a terrible dependence on credit cards, how the debt is eating them alive, and how they are struggling to find their way out of this predicament. America's seniors are one of the hardest-hit groups. In fact, from 1992 to 2004 the rate of debt of Americans age 55 and over rose faster than that of any other group. Some of them were even using credit cards to fill the gaps in their Medicare. Others were at risk of losing their homes.

I began to feel like George Bailey begging for loan forgiveness in *It's a Wonderful Life.* The executives began to speak up. Most of them had stories of relatives, spouses, and friends (not themselves, of course) who had had problems with credit debt. We talked it over.

Now the ground was ready and I started describing the self-control credit card idea as a way to help consumers spend less and save more. At first I think the bankers were a bit stunned. I was suggesting that they help consumers control their spending. Did I realize that the bankers and credit card companies made $17 billion a year in interest from these cards? Hello? They should give that up?

Well, I wasn't that naive. I explained to the bankers that there was a great

business proposition behind the idea of a self-control card. “Look,” I said, “the credit card business is cutthroat. You send out six billion direct-mail pieces a year, and all the card offers are about the same.” Reluctantly, they agreed. “But suppose one credit card company stepped out of the pack,” I continued, “and identified itself as a good guy—as an advocate for the credit-crunched consumer? Suppose one company had the guts to offer a card that would actually help consumers control their credit, and better still, divert some of their money into long-term savings?” I glanced around the room. “My bet is that thousands of consumers would cut up their other credit cards—and sign up with you!”

A wave of excitement crossed the room. The bankers nodded their heads and chatted to one another. It was revolutionary! Soon thereafter we all departed. They shook my hand warmly and assured me that we would be talking again, soon.

Well, they never called me back. (It might have been that they were worried about losing the $17 billion in interest charges, or maybe it was just good old procrastination.) But the idea is still there—a self-control credit card—and maybe one day someone will take the next step.

Reflections on Immediate Gratification and Self-Control

Oscar Wilde once said, “I never put off till tomorrow what I can do the day after.” He seemed to accept and even embrace the role of procrastination in his life, but most of us find the allure of immediate gratification so strong that it wrecks our best-laid plans for dieting, saving money, cleaning the house—the list is endless.

When we have problems with self-control, sometimes we delay tasks that we should do immediately. But we also exhibit problems with self-control when we attend too frequently to tasks that we should put off—such as obsessively checking our e-mail.

The danger of continually checking e-mail was crucial in the plotline of the movie *Seven Pounds*: Will Smith’s character checks his phone for e-mail while driving and veers head-on into an oncoming van, killing his wife and six other people. This is just a movie, of course, but compulsively checking e-mail while driving is more common than most of us would care to admit (go ahead, raise your hand*).

I hope that you’re not that addicted to e-mail, but too many of us suffer from an unhealthy attachment to it. A recent Australian report found that workers spent an average of 14.5 hours, or more than two working days a week, checking, reading, arranging, deleting, and responding to e-mail.[8] Add to this the rise of social networks and news groups, and you can most likely double the time we spend in virtual interaction and message management.

I, for one, have very mixed feelings about e-mail. On one hand, it lets me communicate with colleagues and friends all over the world without the delays of snail mail or the constraints of talking on the phone. (Is it too late to call? What time is it in Auckland anyway?) On the other hand, I receive hundreds of messages a day, including many involving things I don’t really care about (announcements, minutes of meetings, and so on). Regardless of whether I care, the ongoing stream of e-mail is a constant distraction.

I once tried to overcome this distraction by resolving to check e-mail only at night, but I quickly discovered that this would not do. Other people expected me to do as they do—check e-mail constantly and rely on it as a sole means of communication. As a result of not checking my e-mail regularly, I ended up going to meetings that had been canceled, or arriving at the wrong time or place. So I gave in, and now I check e-mail way too often, and as I do I constantly sort the messages into categories: spam and unimportant e-mail that I delete right away; messages I might care about or need to respond to at some point in the future; messages I need to respond to immediately; and so on.

In bygone days the mail cart came around the office once or twice a day with a few letters and memos—not so with e-mail, which never takes a break. For me, the day goes like this: I start working on something and get deeply into it. Eventually I get stuck on some difficult point, and decide to take a quick break—obviously, to check e-mail. Twenty minutes later I get back to the task, with little recollection of where I was and what I was thinking. By the time I'm back on track, I've lost both time and some of my focus, and this outcome assuredly does not help me solve whatever problem caused me to take five in the first place.

Sadly, this is not where the story ends. Enter smart phones—an even greater time sink. A while ago I got one of these lovely, distracting gadgets in the form of an iPhone, which meant that I could also check e-mail while waiting in a checkout line, walking into the office, riding in the elevator, while listening to other people's lectures (I haven't yet figured out how to do this during my own lectures), and even while sitting at traffic lights. In truth, the iPhone has made the level of my addiction very clear. I check it almost ceaselessly. (Businesspeople recognize the addictive properties of these devices: this is why they often call their BlackBerries "CrackBerries.")

I THINK E-MAIL addiction has something to do with what the behavioral psychologist B. F. Skinner called "schedules of reinforcement." Skinner used this phrase to describe the relationship between actions (in his case, a hungry rat pressing a lever in a so-called Skinner box) and their associated rewards (pellets of food). In particular, Skinner distinguished between fixed-ratio schedules of reinforcement and variable-ratio schedules of reinforcement. Under a fixed schedule, a rat received a reward of food after it pressed the lever a fixed number of times—say 100 times. (To make a human comparison, a used-car dealer might get a $1,000 bonus for every 10 cars sold.) Under the variable schedule, the rat earned the food pellet after it pressed the lever a random number of times. Sometimes it would receive the food after pressing 10 times, and sometimes after pressing 200 times. (Analogously, our used-car dealer would earn a $1,000 bonus after selling an unknown number of cars.)

Thus, under the variable schedule of reinforcement, the arrival of the reward is unpredictable. On the face of it, one might expect that the fixed schedules of reinforcement would be more motivating and rewarding because the rat (or the used-car dealer) can learn to predict the outcome of his work. Instead, Skinner found that the variable schedules were actually more motivating. The most telling result was that when the rewards ceased, the rats who were under the fixed schedules stopped working almost immediately, but those under the variable schedules kept working for a very long time.

This variable schedule of reinforcement also works wonders for motivating

people. It is the magic (or, more accurately, dark magic) that underlies gambling and playing the lottery. How much fun would it be to play a slot machine if you knew in advance that you would always lose nine times before winning once, and that this sequence would continue for as long as you played? It would probably be no fun at all! In fact, the joy of gambling comes from the inability to predict when rewards are coming, so we keep playing.

So, what do food pellets and slot machines have to do with e-mail? If you think about it, e-mail is very much like gambling. Most of it is junk and the equivalent to pulling the lever of a slot machine and losing, but every so often we receive a message that we really want. Maybe it contains good news about a job, a bit of gossip, a note from someone we haven't heard from in a long time, or some important piece of information. We are so happy to receive the unexpected e-mail (pellet) that we become addicted to checking, hoping for more such surprises. We just keep pressing that lever, over and over again, until we get our reward.

This explanation gives me a better understanding of my e-mail addiction, and more important, it might suggest a few means of escape from this Skinner box and its variable schedule of reinforcement. One helpful approach I've discovered is to turn off the automatic e-mail-checking feature. This action doesn't eliminate my checking, but it reduces the frequency with which my computer notifies me that I have new e-mail waiting (some of it, I would think to myself, must be interesting or relevant). Additionally, many applications allow users to link different colors and sounds to different incoming e-mail. For example, I assign every e-mail on which I'm cc'd to the color gray, and send it directly to a folder labeled "Later." Similarly, I set my application to play a particularly cheerful sound when I receive a message from a source I've marked as urgent and important (these include messages from my wife, students, or members of my department). Sure, it takes some time to set up such filters, but having once gone to the trouble of doing so, I've reduced the randomness of the reward, made the schedule of reinforcement more fixed, and ultimately improved my life. As for overcoming the temptations of checking my iPhone too frequently—I am still working on that one.

Further Reflection on Self-Control:
The Lesson of Interferon

Several years ago I heard an interview on NPR with the Delany sisters, who lived to be 102 and 104. There was one particular part of the interview that remained with me. The sisters said that one of their secrets for a long life was never marrying, because they never had husbands to "worry them to death." This sounds reasonable enough, but it isn't something to which I can personally attest (and it also turns out that men benefit more from marriage anyway).[28] One of the sisters said that another secret was to avoid hospitals, which seemed sensible for two reasons—if you're healthy in the first place, you don't need to go, and you're also less likely to catch an illness from being in the hospital.

I certainly understood what she was talking about. When I was first hospitalized for my burns, I acquired hepatitis from a blood transfusion. Obviously, there's no good time to get hepatitis, but the timing could not have been worse for me. The disease increased the risks of my operations, delayed my treatment, and caused my body to reject many of the skin transplants. After a

while the hepatitis subsided, but it still slowed my recovery by flaring up from time to time and wreaking havoc on my system.

This was in 1985, before my type of hepatitis had been isolated; the doctors knew it wasn't hepatitis A or B, but it remained a mystery, so they just called it non-A-non-B hepatitis. In 1993, when I was in graduate school, I had a flare-up; I checked into the student health center and the doctor told me I had hepatitis C, which had recently been isolated and identified. This was good news for two reasons. First, I now knew what I had, and second, a new experimental treatment, interferon, looked promising. Given the threat of liver fibrosis, cirrhosis, and the possibility of early death from hepatitis C, it seemed to me that being part of an experimental study was clearly the lesser of two evils.

Interferon was initially approved by the FDA for treatment of hairy cell leukemia (which has no other real treatment) and, as is often the case with cancer therapy, the treatment regimen was particularly distasteful. The initial protocol called for self-injections of interferon three times a week. I was warned that after each injection I would experience fever, nausea, headaches, and vomiting, and this warning was accurate. So, for six months on Mondays, Wednesdays, and Fridays I would arrive home from school, take the needle from the medicine cabinet, open the refrigerator, load the
syringe with the right dosage of interferon, and plunge the needle into my thigh. Then I would lie down in the big
hammock—the only interesting piece of furniture in my loftlike student apartment—from which I had a perfect view of the television. I kept a bucket within reach to catch the vomit that would inevitably come up, after which the fever, shivering, and headache would begin. At some point I would fall asleep and wake up aching with flulike symptoms. By noon I would be more or less OK and would go back to work.

The difficulty that I, and the rest of the patients, had with the interferon was the basic problem of delayed gratification and self-control. On every injection day I was faced with a trade-off between giving myself an injection and feeling sick for the next 16 hours (a negative immediate effect), and the hope that the treatment would cure me in the long term (a positive long-term effect). At the end of the six-month trial the doctors told me that I was the only patient in the protocol who had followed the regimen in the way they designed it. Everyone else in the study skipped the medication numerous times, which was hardly surprising, given the challenges. (Lack of medical compliance is, in fact, a very pervasive problem.)

So how did I do it? Did I simply have nerves of steel? No. Like anyone else, I have plenty of problems with self-control. But I did have a trick. I basically tried to harness my other desires in an effort to make the prospect of the terrible injection more bearable. For me, the key was movies.

I love movies. If I had the time, I would watch one every day. When the doctors told me what to expect, I decided that I would not watch any movies until after I injected myself, and then I could watch as many as I wanted until I fell asleep.

On every injection day, I would stop at the video store on the way to school and pick up a few films that I wanted to see. I would have these in my bag and would eagerly anticipate watching them later that day. Then, immediately after I

took the injection, but before the shivering and headache set in, I jumped into my hammock, got comfortable, made sure the bucket was in position, and started my mini–film fest. This way, I learned to associate the initial injection with the rewarding experience of watching a wonderful movie. Only an hour later, after the negative side effects kicked in, did I have a less than wonderful feeling about it.

Planning my evenings in this way helped my brain associate the injection more closely with the movie than with the fever, chills, and vomiting, and thus, I was able to continue the treatment.

DURING THE SIX-MONTH treatment, it looked as though the interferon was working, and my liver function improved dramatically. Unfortunately, a few weeks after the trial was over, the hepatitis returned, so I started a more aggressive treatment. This one lasted a year and involved not only interferon but also a drug called ribavirin. To compel myself to follow this treatment, I again tried the injection-movie-hammock procedure as before. (Thanks to my somewhat faulty memory, I was even able to enjoy some of the same movies I had watched during the first treatment with interferon.)

This time, however, I was also interviewing at various universities for a job as an assistant professor. I had to travel to 14 cities, stay overnight in hotels, give a talk to groups of academics, and then submit to one-on-one interviews with professors and deans. To avoid telling my prospective colleagues about my adventures with interferon and ribavirin, I would insist on a rather strange schedule of interviews. I routinely had to make some excuse about why I arrived early the day before the interview but could not go out for dinner that evening with my hosts. Instead, I would check into the hotel, take out the injection from a little icebox that I carried with me, inject myself, and watch a few movies on the hotel television. The following day I would also try to delay the interviews for a few hours, but once I felt better I would go through the interview as best I could. (Sometimes my procedure worked; sometimes I had to meet people while I still felt wretched.) Fortunately, after I finished my interviews I received excellent news. Not only had I been offered a job, but the combination treatment had eliminated the hepatitis from my liver. I've been hepatitis-free ever since.

THE LESSON I took away from my interferon treatment is a general one: if a particular desired behavior results in an immediate negative outcome (punishment), this behavior will be very difficult to promote, even if the ultimate outcome (in my case, improved health) is highly desirable. After all, that's what the problem of delayed gratification is all about. Certainly, we know that exercising regularly and eating more vegetables will help us be healthier, even if we don't live to be as old as the Delany sisters; but because it is very hard to hold a vivid image of our future health in our mind's eye, we can't keep from reaching for the doughnuts.

In order to overcome many types of human fallibility, I believe it's useful to look for tricks that match immediate, powerful, and positive reinforcements with the not-so-pleasant steps we have to take toward our long-term objectives. For me, beginning a movie—before I felt any side effects—helped me to sustain the unpleasantness of the treatment. As a matter of fact, I timed everything perfectly. The moment I finished injecting myself, I pressed the Play button. I suspect that had I hit Play after the side effects kicked in, I would not have been as successful

in winning the tug-of-war. And who knows? Maybe if I had waited for the side effects to kick in before I started the movies, I would have created a negative association and would now enjoy movies less as a consequence.*

ONE OF MY colleagues at Duke University, Ralph Keeney, recently noted that America's top killer isn't cancer or heart disease, nor is it smoking or obesity. It's our inability to make smart choices and overcome our own self-destructive behaviors.[10] Ralph estimates that about half of us will make a lifestyle decision that will ultimately lead us to an early grave. And as if this were not bad enough, it seems that the rate at which we make these deadly decisions is increasing at an alarming pace.

I suspect that over the next few decades, real improvements in life expectancy and quality are less likely to be driven by medical technology than by improved decision making. Since focusing on long-term benefits is not our natural tendency, we need to more carefully examine the cases in which we repeatedly fail, and try to come up with some remedies for these situations. (For an overweight movie lover, the key might be to enjoy watching a film while walking on the treadmill.) The trick is to find the right behavioral antidote for each problem. By pairing something that we love with something that we dislike but that is good for us, we might be able to harness desire with outcome—and thus overcome some of the problems with self-control we face every day.

Chapter 8

The High Price of Ownership

Why We Overvalue What We Have

At Duke University, basketball is somewhere between a passionate hobby and a religious experience. The basketball stadium is small and old and has bad acoustics—the kind that turn the cheers of the crowd into thunder and pump everyone's adrenaline level right through the roof. The small size of the stadium creates intimacy but also means there are not enough seats to contain all the fans who want to attend the games. This, by the way, is how Duke likes it, and the university has expressed little interest in exchanging the small, intimate stadium for a larger one. To ration the tickets, an intricate selection process has been developed over the years, to separate the truly devoted fans from all the rest.

Even before the start of the spring semester, students who want to attend the games pitch tents in the open grassy area outside the stadium. Each tent holds up to 10 students. The campers who arrive first take the spots closest to the stadium's entrance, and the ones who come later line up farther back. The evolving community is called Krzyzewskiville, reflecting the respect the students have for Coach K—Mike Krzyzewski—as well as their aspirations for victory in the coming season.

So that the serious basketball fans are separated from those without "Duke blue" running through their veins, an air horn is sounded at random times. At the sound, a countdown begins, and within the next five minutes at least one person from each tent must check in with the basketball authorities. If a tent fails to register within these five minutes, the whole tent gets bumped to the end of the line. This procedure continues for most of the spring semester, and intensifies in the last 48 hours before a game.

At that point, 48 hours before a game, the checks become "personal checks." From then on, the tents are merely a social structure: when the air horn is sounded, every student has to check in personally with the basketball authorities. Missing an "occupancy check" in these final two days can mean being bumped to the end of the line. Although the air horn sounds occasionally before routine games, it can be heard at all hours of night and day before the really big contests (such as games against the University of North Carolina-Chapel Hill and during the national championships).

But that's not the oddest part of the ritual. The oddest part is that for the really important games, such as the national titles, the students at the front of the line still don't get a ticket. Rather, each of them gets a lottery number. Only later, as they crowd around a list of winners posted at the student center, do they find out if they have really, truly won a ticket to the coveted game.

AS ZIV CARMON (a professor at INSEAD) and I listened to the air horn during the

campout at Duke in the spring of 1994, we were intrigued by the real-life experiment going on before our eyes. All the students who were camping out wanted passionately to go to the basketball game. They had all camped out for a long time for the privilege. But when the lottery was over, some of them would become ticket owners, while others would not.

The question was this: would the students who had won tickets—who had ownership of tickets—value those tickets more than the students who had not won them even though they all "worked" equally hard to obtain them? On the basis of Jack Knetsch, Dick Thaler, and Daniel Kahneman's research on the "endowment effect," we predicted that when we own something—whether it's a car or a violin, a cat or a basketball ticket—we begin to value it more than other people do.

Think about this for a minute. Why does the seller of a house usually value that property more than the potential buyer? Why does the seller of an automobile envision a higher price than the buyer? In many transactions why does the owner believe that his possession is worth more money than the potential owner is willing to pay? There's an old saying, "One man's ceiling is another man's floor." Well, when you're the owner, you're at the ceiling; and when you're the buyer, you're at the floor.

To be sure, that is not always the case. I have a friend who contributed a full box of record albums to a garage sale, for instance, simply because he couldn't stand hauling them around any longer. The first person who came along offered him $25 for the whole box (without even looking at the titles), and my friend accepted it. The buyer probably sold them for 10 times that price the following day. Indeed, if we always overvalued what we had, there would be no such thing as *Antiques Roadshow*. ("How much did you pay for this powder horn? Five dollars? Well, let me tell you, you have a national treasure here.")

But this caveat aside, we still believed that in general the ownership of something increases its value in the owner's eyes. Were we right? Did the students at Duke who had won the tickets—who could now anticipate experiencing the packed stands and the players racing across the court—value them more than the students who had not won them? There was only one good way to find out: get them to tell us how much they valued the tickets.

In this case, Ziv and I would try to buy tickets from some of the students who had won them—and sell them to those who didn't. That's right; we were about to become ticket scalpers.

THAT NIGHT WE got a list of the students who had won the lottery and those who hadn't, and we started telephoning. Our first call was to William, a senior majoring in chemistry. William was rather busy. After camping for the previous week, he had a lot of homework and e-mail to catch up on. He was not too happy, either, because after reaching the front of the line, he was still not one of the lucky ones who had won a ticket in the lottery.

"Hi, William," I said. "I understand you didn't get one of the tickets for the final four."

"That's right."

"We may be able to sell you a ticket."

"Cool."

"How much would you be willing to pay for one?"

"How about a hundred dollars?" he replied.

"Too low," I laughed. "You'll have to go higher."

"A hundred fifty?" he offered.

"You have to do better," I insisted. "What's the highest price you'll pay?"

William thought for a moment. "A hundred seventy-five."

"That's it?"

"That's it. Not a penny more."

"OK, you're on the list. I'll let you know," I said. "By the way, how'd you come up with that hundred seventy-five?"

William said he figured that for $175 he could also watch the game at a sports bar, free, spend some money on beer and food, and still have a lot left over for a few CDs or even some shoes. The game would no doubt be exciting, he said, but at the same time $175 is a lot of money.

Our next call was to Joseph. After camping out for a week Joseph was also behind on his schoolwork. But he didn't care—he had won a ticket in the lottery and now, in a few days, he would be watching the Duke players fight for the national title.

"Hi, Joseph," I said. "We may have an opportunity for you—to sell your ticket. What's your minimum price?"

"I don't have one."

"Everyone has a price," I replied, giving the comment my best Al Pacino tone.

His first answer was $3,000.

"Come on," I said, "That's way too much. Be reasonable; you have to offer a lower price."

"All right," he said, "twenty-four hundred."

"Are you sure?" I asked.

"That's as low as I'll go."

"OK. If I can find a buyer at that price, I'll give you a call. By the way," I added, "how did you come up with that price?"

"Duke basketball is a huge part of my life here," he said passionately. He then went on to explain that the game would be a defining memory of his time at Duke, an experience that he would pass on to his children and grandchildren. "So how can you put a price on that?" he asked. "Can you put a price on memories?"

William and Joseph were just two of more than 100 students whom we called. In general, the students who did not own a ticket were willing to pay around $170 for one. The price they were willing to pay, as in William's case, was tempered by alternative uses for the money (such as spending it in a sports bar for drinks and food). Those who owned a ticket, on the other hand, demanded about $2,400 for it. Like Joseph, they justified their price in terms of the importance of

the experience and the lifelong memories it would create.

What was really surprising, though, was that in all our phone calls, not a single person was willing to sell a ticket at a price that someone else was willing to pay. What did we have? We had a group of students all hungry for a basketball ticket before the lottery drawing; and then, bang—in an instant after the drawing, they were divided into two groups—ticket owners and non–ticket owners. It was an emotional chasm that was formed, between those who now imagined the glory of the game, and those who imagined what else they could buy with the price of the ticket. And it was an empirical chasm as well—the average selling price (about $2,400) was separated by a factor of about 14 from the average buyer's offer (about $175).

From a rational perspective, both the ticket holders and the non–ticket holders should have thought of the game in exactly the same way. After all, the anticipated atmosphere at the game and the enjoyment one could expect from the experience should not depend on winning a lottery. Then how could a random lottery drawing have changed the students' view of the game—and the value of the tickets—so dramatically?

OWNERSHIP PERVADES OUR lives and, in a strange way, shapes many of the things we do. Adam Smith wrote, "Every man [and woman] . . . lives by exchanging, or becomes in some measure a merchant, and the society itself grows to be what is properly a commercial society." That's an awesome thought. Much of our life story can be told by describing the ebb and flow of our particular possessions—what we get and what we give up. We buy clothes and food, automobiles and homes, for instance. And we sell things as well—homes and cars, and in the course of our careers, our time.

Since so much of our lives is dedicated to ownership, wouldn't it be nice to make the best decisions about this? Wouldn't it be nice, for instance, to know exactly how much we would enjoy a new home, a new car, a different sofa, and an Armani suit, so that we could make accurate decisions about owning them? Unfortunately, this is rarely the case. We are mostly fumbling around in the dark. Why? Because of three irrational quirks in our human nature.

The first quirk, as we saw in the case of the basketball tickets, is that we fall in love with what we already have. Suppose you decide to sell your old VW bus. What do you start doing? Even before you've put a FOR SALE sign in the window, you begin to recall trips you took. You were much younger, of course; the kids hadn't sprouted into teenagers. A warm glow of remembrance washes over you and the car. This applies not only to VW buses, of course, but to everything else. And it can happen fast.

For instance, two of my friends adopted a child from China and told me this remarkable story. They went to China with 12 other couples. When they reached the orphanage, the director took each of the couples separately into a room and presented them with a daughter. When the couples reconvened the following morning, they all commented on the director's wisdom: Somehow she knew exactly which little girl to give to each couple. The matches were perfect. My friends felt the same way, but they also realized that the matches had been random. What made each match seem perfect was not the Chinese woman's

talent, but nature's ability to make us instantly attached to what we have.

The second quirk is that we focus on what we may lose, rather than what we may gain. When we price our beloved VW, therefore, we think more about what we will lose (the use of the bus) than what we will gain (money to buy something else). Likewise, the ticket holder focuses on losing the basketball experience, rather than imagining the enjoyment of obtaining money or on what can be purchased with it. Our aversion to loss is a strong emotion, and as I will explain later in the book, one that sometimes causes us to make bad decisions. Do you wonder why we often refuse to sell some of our cherished clutter, and if somebody offers to buy it, we attach an exorbitant price tag to it? As soon as we begin thinking about giving up our valued possessions, we are already mourning the loss.

The third quirk is that we assume other people will see the transaction from the same perspective as we do. We somehow expect the buyer of our VW to share our feelings, emotions, and memories. Or we expect the buyer of our house to appreciate how the sunlight filters through the kitchen windows. Unfortunately, the buyer of the VW is more likely to notice the puff of smoke that is emitted as you shift from first into second; and the buyer of your house is more likely to notice the strip of black mold in the corner. It is just difficult for us to imagine that the person on the other side of the transaction, buyer or seller, is not seeing the world as we see it.

OWNERSHIP ALSO HAS what I'd call "peculiarities." For one, the more work you put into something, the more ownership you begin to feel for it. Think about the last time you assembled some furniture. Figuring out which piece goes where and which screw fits into which hole boosts the feeling of ownership.

In fact, I can say with a fair amount of certainty that pride of ownership is inversely proportional to the ease with which one assembles the furniture; wires the high-definition
television to the surround-sound system; installs software;
or gets the baby into the bath, dried, powdered, diapered, and tucked away in the crib. My friend and colleague Mike Norton (a professor at Harvard) and I have a term for this phenomenon: the "Ikea effect."

Another peculiarity is that we can begin to feel ownership even before we own something. Think about the last time you entered an online auction. Suppose you make your first bid on Monday morning, for a wristwatch, and at this point you are the highest bidder. That night you log on, and you're still the top dog. Ditto for the next night. You start thinking about that elegant watch. You imagine it on your wrist; you imagine the compliments you'll get. And then you go online again one hour before the end of the auction. Some dog has topped your bid! Someone else will take your watch! So you increase your bid beyond what you had originally planned.

Is the feeling of partial ownership causing the upward spiral we often see in online auctions? Is it the case that the longer an auction continues, the greater grip virtual ownership will have on the various bidders and the more money they will spend? A few years ago, James Heyman, Yesim Orhun (a professor at the University of Chicago), and I set up an experiment to explore how the duration of

an auction gradually affects the auction's participants and encourages them to bid to the bitter end. As we suspected, the participants who were the highest bidders, for the longest periods of time, ended up with the strongest feelings of virtual ownership. Of course, they were in a vulnerable position: once they thought of themselves as owners, they were compelled to prevent losing their position by bidding higher and higher.

"Virtual ownership," of course, is one mainspring of the advertising industry. We see a happy couple driving down the California coastline in a BMW convertible, and we imagine ourselves there. We get a catalog of hiking clothing from Patagonia, see a polyester fleece pullover, and—poof—we start thinking of it as ours. The trap is set, and we willingly walk in. We become partial owners even before we own anything.

There's another way that we can get drawn into ownership. Often, companies will have "trial" promotions. If we have a basic cable television package, for instance, we are lured into a "digital gold package" by a special "trial" rate (only $59 a month instead of the usual $89). After all, we tell ourselves, we can always go back to basic cable or downgrade to the "silver package."

But once we try the gold package, of course, we claim ownership of it. Will we really have the strength to downgrade back to basic or even to "digital silver"? Doubtful. At the onset, we may think that we can easily return to the basic service, but once we are comfortable with the digital picture, we begin to incorporate our ownership of it into our view of the world and ourselves, and quickly rationalize away the additional price. More than that, our aversion to loss —the loss of that nice crisp "gold package" picture and the extra channels—is too much for us to bear. In other words, before we make the switch we may not be certain that the cost of the digital gold package is worth the full price; but once we have it, the emotions of ownership come welling up, to tell us that the loss of "digital gold" is more painful than spending a few more dollars a month. We may think we can turn back, but that is actually much harder than we expected.

Another example of the same hook is the "30-day money-back guarantee." If we are not sure whether or not we should get a new sofa, the guarantee of being able to change our mind later may push us over the hump so that we end up getting it. We fail to appreciate how our perspective will shift once we have it at home, and how we will start viewing the sofa—as ours—and consequently start viewing returning it as a loss. We might think we are taking it home only to try it out for a few days, but in fact we are becoming owners of it and are unaware of the emotions the sofa can ignite in us.

OWNERSHIP IS NOT limited to material things. It can also apply to points of view. Once we take ownership of an idea—whether it's about politics or sports—what do we do? We love it perhaps more than we should. We prize it more than it is worth. And most frequently, we have trouble letting go of it because we can't stand the idea of its loss. What are we left with then? An ideology—rigid and unyielding.

THERE IS NO known cure for the ills of ownership. As Adam Smith said, it is woven into our lives. But being aware of it might help. Everywhere around us we see the temptation to improve the quality of our lives by buying a larger home, a second car, a new dishwasher, a lawn mower, and so on. But, once we change our possessions we have a very hard time going back down. As I noted earlier, ownership simply changes our perspective. Suddenly, moving backward to our pre-ownership state is a loss, one that we cannot abide. And so, while moving up in life, we indulge ourselves with the fantasy that we can always ratchet ourselves back if need be; but in reality, we can't. Downgrading to a smaller home, for instance, is experienced as a loss, it is psychologically painful, and we are willing to make all kinds of sacrifices in order to avoid such losses—even if, in this case, the monthly mortgage sinks our ship.

My own approach is to try to view all transactions (particularly large ones) as if I were a nonowner, putting some distance between myself and the item of interest. In this attempt, I'm not certain if I have achieved the uninterest in material things that is espoused by the Hindu sannyasi, but at least I try to be as Zen as I can about it.

Reflections on the Challenges of Ownership

In 2007 and 2008, home values across America plummeted as fast as George W. Bush's approval ratings. Each month brought with it more bad news: more foreclosures, more new homes for sale in a stagnant real estate market, and more stories of people who couldn't get mortgages. Results from a study by Zillow.com (a Web site that facilitates home searches and price estimations) illustrated just how strongly this news affected home owners: in the second quarter of 2008, nine out of ten home owners (92 percent) said there had been foreclosures in their local real estate market, and they were concerned that these foreclosures had lowered home values in their neighborhoods. Moreover, four in five home owners (82 percent) did not see much hope for improvement in the real estate market in the near future.

On the face of it, Zillow's research suggested that homeowners had been paying attention to the media, had an idea of what was happening in the economy, and understood that the housing crunch was a reality. But this study also found that these seemingly well-informed people believed that the values of their own homes had not decreased as much. Two out of three home owners (62 percent) believed that the value of their own home had increased or stayed the same, and about half (56 percent) planned to invest in home improvements, even as they watched the housing market collapse around them. What explained the wide gap between their inflated perception of their homes' values and the gloomy market reality?

As we discussed in Chapter 8, ownership fundamentally changes our perspective. In the same way that we think our own kids are more wonderful and special than our friends' and neighbors' children (regardless of whether our children deserve such esteem), we overvalue everything that we own, whether it's a pair of basketball tickets or our domiciles.

But home ownership is even more interesting and complex than, say, the regular case of owning a coffee mug or a pair of baseball tickets—because we invest so much in our houses. Think, for example, about all the changes and

tinkering we do to our homes once we move into them. We replace laminate countertops with granite. We take out a wall and install a new window that lets the light shine just so on the dining room table. We paint the living room walls a deep earthy clay color. We change the bathroom tile. We add a porch and install a koi pond in the backyard. Little by little, we make changes here and there until the house feels perfectly tailored to our unique individual tastes, until it expresses our elegant or eclectic sense of style to everyone else. When the neighbors come over, they admire our countertops and light fixtures. But in the end, do other people value the changes we have so lovingly made as much as we do? Do they value these changes at all?

Consider a home owner who compares her own beautifully remodeled house with a similar one down the street that has been languishing on the market for months, or with another that has recently sold for much less than the asking price. In so doing, she understands why the owners of these other homes had such a hard time selling them. They had the laminate and not the granite countertops, no earthy clay paint or light that fell just so on the dining room table. “No wonder those houses didn’t sell,” she thinks to herself, “they simply are not as nice as mine.”

MY WIFE, SUMI, and I also fell victim to this bias. When we worked at MIT, we bought a new house in Cambridge, Massachusetts (the house was originally built in 1890, but it felt new to us). We promptly went about fixing it up. We took down some walls to give the house an open feel, which we loved. We renovated the bathrooms and set up a sauna in the basement. We also converted the carriage house in the garden into a small combination office-apartment. Sometimes we would pack our laundry basket with some wine, food, and clothing, and escape to the carriage house for a “weekend away.”

Then, in 2007, we took jobs at Duke University and moved to Durham, North Carolina. We assumed that the housing market would continue to decline, and that it would be in our best interest to sell the Cambridge house as quickly as possible. We also wanted to avoid having to pay for heating, taxes, and a mortgage on two homes.

Many people came to see our beautifully remodeled Cambridge home. They all seemed to appreciate the structure and the feel of the place, but no one put in an offer. People told
us that the house was beautiful, but somehow they could not fully appreciate the benefit of the open floor plan. Instead, they wanted something with more privacy. We heard what they said, but it didn’t fully register. “Clearly,” we said to each other after each set of prospective buyers had come and gone, “those people are just dull and unimaginative, and have no taste. Surely our beautiful, open, airy home will be just right for the perfect someone.”

Time passed. We paid double mortgages, double heating bills, and double taxes while the housing market continued to slow down. Many more people came to see the house and left without extending an offer. Eventually Jean, our real estate agent, delivered the bad news to us the way a doctor tells a patient there’s something funny looking on his X-ray. “I think,” she said slowly, “that if you want to sell the house, you will have to rebuild some walls and reverse some of the changes you have made.” Until she said those words, we had not accepted this truth. Despite our disbelief, and still fully convinced of our superior taste, we took

the plunge and paid a contractor to re-erect some walls. A few weeks later the house was sold.

In the end, the buyers didn't want our home. They wanted theirs. This was a very expensive lesson, and I certainly wish we had had a better sense of the effect of our modifications on potential buyers.

OUR PROPENSITY TO overvalue what we own is a basic human bias, and it reflects a more general tendency to fall in love with, and be overly optimistic about, anything that has to do with ourselves. Think about it—don't you feel that you are a better-than-average driver, are more likely to be able to afford retirement, and are less likely to suffer from high cholesterol, get a divorce, or get a parking ticket if you overstay your meter by a few minutes? This positivity bias, as psychologists call it, has another name: "The Lake Wobegone Effect," named after the fictional town in Garrison Keillor's popular radio series *A Prairie Home Companion*. In Lake Wobegone, according to Keillor, "all the women are strong, all the men are good-looking, and all the children are above average."

I don't think we can become more accurate and objective in the way we think about our children and houses, but maybe we can realize that we have such biases and listen more carefully to the advice and feedback we get from others.

Chapter 9

Keeping Doors Open

Why Options Distract Us from Our Main Objective

In 210 BC, a Chinese commander named Xiang Yu led his troops across the Yangtze River to attack the army of the Qin (Ch'in) dynasty. Pausing on the banks of the river for the night, his troops awakened in the morning to find, to their horror, that their ships were burning. They hurried to their feet to fight off their attackers, but soon discovered that it was Xiang Yu himself who had set their ships on fire, and that he had also ordered all the cooking pots crushed.

Xiang Yu explained to his troops that without the pots and the ships, they had no other choice but to fight their way to victory or perish. That did not earn Xiang Yu a place on the Chinese army's list of favorite commanders, but it did have a tremendous focusing effect on his troops: grabbing their lances and bows, they charged ferociously against the enemy and won nine consecutive battles, completely obliterating the main-force units of the Qin dynasty.

Xiang Yu's story is remarkable because it is completely antithetical to normal human behavior. Normally, we cannot stand the idea of closing the doors on our alternatives. Had most of us been in Xiang Yu's armor, in other words, we would have sent out part of our army to tend to the ships, just in case we needed them for retreat; and we would have asked others to cook meals, just in case the army needed to stay put for a few weeks. Still others would have been instructed to pound rice out into paper scrolls, just in case we needed parchment on which to sign the terms of the surrender of the mighty Qin (which was highly unlikely in the first place).

In the context of today's world, we work just as feverishly to keep all our options open. We buy the expandable computer system, just in case we need all those high-tech bells and whistles. We buy the insurance policies that are offered with the plasma high-definition television, just in case the big screen goes blank. We keep our children in every activity we can imagine—just in case one sparks their interest in gymnastics, piano, French, organic gardening, or tae kwon do. And we buy a luxury SUV, not because we really expect to drive off the highway, but because just in case we do, we want to have some clearance beneath our axles.

We might not always be aware of it, but in every case we give something up for those options. We end up with a computer that has more functions than we need, or a stereo with an unnecessarily expensive warranty. And in the case of our kids, we give up their time and ours—and the chance that they could become really good at one activity—in trying to give them some experience in a large range of activities. In running back and forth among the things that might be important, we forget to spend enough time on what really *is* important. It's a fool's game, and one that we are remarkably adept at playing.

I saw this precise problem in one of my undergraduate students, an extremely talented young man named Joe. As an incoming junior, Joe had just completed his required courses, and now he had to choose a major. But which one? He had a passion for architecture—he spent his weekends studying the eclectically designed buildings around Boston. He could see himself as a designer of such proud structures one day. At the same time he liked computer science, particularly the freedom and flexibility that the field offered. He could see himself with a good-paying job at an exciting company like Google. His parents wanted him to become a computer scientist—and besides, who goes to MIT to be an architect anyway?* Still, his love of architecture was strong.

As Joe spoke, he wrung his hands in frustration. The classes he needed for majors in computer science and architecture were incompatible. For computer science, he needed Algorithms, Artificial Intelligence, Computer Systems Engineering, Circuits and Electronics, Signals and Systems, Computational Structures, and a laboratory in Software Engineering. For architecture, he needed different courses: Experiencing Architecture Studio, Foundations in the Visual Arts, Introduction to Building Technology, Introduction to Design Computing, Introduction to the History and Theory of Architecture, and a further set of architecture studios.

How could he shut the door on one career or the other? If he started taking classes in computer science, he would have a hard time switching over to architecture; and if he started in architecture, he would have an equally difficult time switching to computer science. On the other hand, if he signed up for classes in both disciplines, he would most likely end up without a degree in either field at the end of his four years at MIT, and he would require another year (paid for by his parents) to complete his degree. (He eventually graduated with a degree in computer science, but he found the perfect blend in his first job—designing nuclear subs for the Navy.)

Dana, another student of mine, had a similar problem—but hers centered on two boyfriends. She could dedicate her energy and passion to a person she had met recently and, she hoped, build an enduring relationship with him. Or she could continue to put time and effort into a previous relationship that was dying. She clearly liked the new boyfriend better than the former one—yet she couldn't let the earlier relationship go. Meanwhile, her new boyfriend was getting restless. "Do you really want to risk losing the boy you love," I asked her, "for the remote possibility that you may discover—at some later date—that you love your former boyfriend more?" She shook her head "no," and broke into tears.*

What is it about options that is so difficult for us? Why do we feel compelled to keep as many doors open as possible, even at great expense? Why can't we simply commit ourselves?*

To try to answer these questions, Jiwoong Shin (a professor at Yale) and I devised a series of experiments that we hoped would capture the dilemma represented by Joe and Dana. In our case, the experiment would be based on a computer game that we hoped would eliminate some of the complexities of life and would give us a straightforward answer about whether people have a tendency to keep doors open for too long. We called it the "door game." For a location, we chose a dark, dismal place—a cavern that even Xiang Yu's army

would have been reluctant to enter.

MIT'S EAST CAMPUS dormitory is a daunting place. It is home to the hackers, hardware enthusiasts, oddballs, and general misfits (and believe me—it takes a serious misfit to be a misfit at MIT). One hall allows loud music, wild parties, and even public nudity. Another is a magnet for engineering students, whose models of everything from bridges to roller coasters can be found everywhere. (If you ever visit this hall, press the "emergency pizza" button, and a short time later a pizza will be delivered to you.) A third hall is painted completely black. A fourth has bathrooms adorned with murals of various kinds: press the palm tree or the samba dancer, and music, piped in from the hall's music server (all downloaded legally, of course), comes on.

One afternoon a few years ago, Kim, one of my research assistants, roamed the hallways of East Campus with a laptop tucked under her arm. At each door she asked the students whether they'd like to make some money participating in a quick experiment. When the reply was in the affirmative, Kim entered the room and found (sometimes only with difficulty) an empty spot to place the laptop.

As the program booted up, three doors appeared on the computer screen: one red, the second blue, and the third green. Kim explained that the participants could enter any of the three rooms (red, blue, or green) simply by clicking on the corresponding door. Once they were in a room, each subsequent click would earn them a certain amount of money. If a particular room offered between one cent and 10 cents, for instance, they would make something in that range each time they clicked their mouse in that room. The screen tallied their earnings as they went along.

Getting the most money out of this experiment involved finding the room with the biggest payoff and clicking in it as many times as possible. But this wasn't trivial. Each time you moved from one room to another, you used up one click (you had a total of 100 clicks). On one hand, switching from one room to another might be a good strategy for finding the biggest payout. On the other hand, running madly from door to door (and room to room) meant that you were burning up clicks which could otherwise have made you money.

Albert, a violin player (and a resident of the Dark Lord Krotus worshippers' hall), was one of the first participants. He was a competitive type, and determined to make more money than anyone else playing the game. For his first move, he chose the red door and entered the cube-shaped room.

Once inside, he clicked the mouse. It registered 3.5 cents. He clicked again; 4.1 cents; a third click registered one cent. After he sampled a few more of the rewards in this room, his interest shifted to the green door. He clicked the mouse eagerly and went in.

Here he was rewarded with 3.7 cents for his first click; he clicked again and received 5.8 cents; he received 6.5 cents the third time. At the bottom of the screen his earnings began to grow. The green room seemed better than the red room—but what about the blue room? He clicked to go through that last unexplored door. Three clicks fell in the range of four cents. Forget it. He hurried back to the green door (the room paying about five cents a click) and spent the

remainder of his 100 clicks there, increasing his payoff. At the end, Albert inquired about his score. Kim smiled as she told him it was one of the best so far.

ALBERT HAD CONFIRMED something that we suspected about human behavior: given a simple setup and a clear goal (in this case, to make money), all of us are quite adept at pursuing the source of our satisfaction. If you were to express this experiment in terms of dating, Albert had essentially sampled one date, tried another, and even had a fling with a third. But after he had tried the rest, he went back to the best—and that's where he stayed for the remainder of the game.

But to be frank, Albert had it pretty easy. Even while he was running around with other "dates," the previous ones waited patiently for him to return to their arms. But suppose that the other dates, after a period of neglect, began to turn their backs on him? Suppose that his options began to close down? Would Albert let them go? Or would he try to hang on to all his options for as long as possible? In fact, would he sacrifice some of his guaranteed payoffs for the privilege of keeping these other options alive?

To find out, we changed the game. This time, any door left unvisited for 12 clicks would disappear forever.

SAM, A RESIDENT of the hackers' hall, was our first participant in the "disappearing" condition. He chose the blue door to begin with; and after entering it, he clicked three times. His earnings began building at the bottom of the screen, but this wasn't the only activity that caught his eye. With each additional click, the other doors diminished by one-twelfth, signifying that if not attended to, they would vanish. Eight more clicks and they would disappear forever.

Sam wasn't about to let that happen. Swinging his cursor around, he clicked on the red door, brought it up to its full size, and clicked three times inside the red room. But now he noticed the green door—it was four clicks from disappearing. Once again, he moved his cursor, this time restoring the green door to its full size.

The green door appeared to be delivering the highest payout. So should he stay there? (Remember that each room had a range of payouts. So Sam could not be completely convinced that the green door was actually the best. The blue might have been better, or perhaps the red, or maybe neither.) With a frenzied look in his eye, Sam swung his cursor across the screen. He clicked the red door and watched the blue door continue to shrink. After a few clicks in the red, he jumped over to the blue. But by now the green was beginning to get dangerously small—and so he was back there next.

Before long, Sam was racing from one option to another, his body leaning tensely into the game. In my mind I pictured a typically harried parent, rushing kids from one activity to the next.

Is this an efficient way to live our lives—especially when another door or two is added every week? I can't tell you the answer for certain in terms of your personal life, but in our experiments we saw clearly that running from pillar to post was not only stressful but uneconomical. In fact, in their frenzy to keep doors

from shutting, our participants ended up making substantially less money (about 15 percent less) than the participants who didn't have to deal with closing doors. The truth is that they could have made more money by picking a room—any room—and merely staying there for the whole experiment! (Think about that in terms of your life or career.)

When Jiwoong and I tilted the experiments against keeping options open, the results were still the same. For instance, we made each click opening a door cost three cents, so that the cost was not just the loss of a click (an opportunity cost) but also a direct financial loss. There was no difference in response from our participants. They still had the same irrational excitement about keeping their options open.

Then we told the participants the exact monetary outcomes they could expect from each room. The results were still the same. They still could not stand to see a door close. Also, we allowed some participants to experience hundreds of practice trials before the actual experiment. Certainly, we thought, they would see the wisdom of *not* pursuing the closing doors. But we were wrong. Once they saw their options shrinking, our MIT students—supposedly among the best and brightest of young people—could not stay focused. Pecking like barnyard hens at every door, they sought to make more money, and ended up making far less.

In the end, we tried another sort of experiment, one that smacked of reincarnation. In this condition, a door would still disappear if it was not visited within 12 clicks. But it wasn't gone forever. Rather, a single click could bring it back to life. In other words, you could neglect a door without any loss. Would this keep our participants from clicking on it anyhow? No. To our surprise, they continued to waste their clicks on the "reincarnating" door, even though its disappearance had no real consequences and could always be easily reversed. They just couldn't tolerate the idea of the loss, and so they did whatever was necessary to prevent their doors from closing.

HOW CAN WE unshackle ourselves from this irrational impulse to chase worthless options? In 1941 the philosopher Erich Fromm wrote a book called *Escape from Freedom.* In a modern democracy, he said, people are beset not by a lack of opportunity, but by a dizzying abundance of it. In our modern society this is emphatically so. We are continually reminded that we can do anything and be anything we want to be. The problem is in living up to this dream. We must develop ourselves in every way possible; must taste every aspect of life; must make sure that of the 1,000 things to see before dying, we have not stopped at number 999. But then comes a problem—are we spreading ourselves too thin? The temptation Fromm was describing, I believe, is what we saw as we watched our participants racing from one door to another.

Running from door to door is a strange enough human activity. But even stranger is our compulsion to chase after doors of little worth—opportunities that are nearly dead, or that hold little interest for us. My student Dana, for instance, had already concluded that one of her suitors was most likely a lost cause. Then why did she jeopardize her relationship with the other man by continuing to nourish the wilting relationship with the less appealing romantic partner? Similarly, how many times have we bought something on sale not because we

really needed it but because by the end of the sale all of those items would be gone, and we could never have it at that price again?

THE OTHER SIDE of this tragedy develops when we fail to realize that some things really are disappearing doors, and need our immediate attention. We may work more hours at our jobs, for instance, without realizing that the childhood of our sons and daughters is slipping away. Sometimes these doors close too slowly for us to see them vanishing. One of my friends told me, for instance, that the single best year of his marriage was when he was living in New York, his wife was living in Boston, and they met only on weekends. Before they had this arrangement—when they lived together in Boston—they would spend their weekends catching up on work rather than enjoying each other. But once the arrangement changed, and they knew that they had only the weekends together, their shared time became limited and had a clear end (the time of the return train). Since it was clear that the clock was ticking, they dedicated the weekends to enjoying each other rather than doing their work.

I'm not advocating giving up work and staying home for the sake of spending all your time with your children, or moving to a different city just to improve your weekends with your spouse (although it might provide some benefits). But wouldn't it be nice to have a built-in alarm, to warn us when the doors are closing on our most important options?

SO WHAT CAN we do? In our experiments, we proved that running helter-skelter to keep doors from closing is a fool's game. It will not only wear out our emotions but also wear out our wallets. What we need is to consciously start closing some of our doors. Small doors, of course, are rather easy to close. We can easily strike names off our holiday card lists or omit the tae kwon do from our daughter's string of activities.

But the bigger doors (or those that seem bigger) are harder to close. Doors that just might lead to a new career or to a better job might be hard to close. Doors that are tied to our dreams are also hard to close. So are relationships with certain people—even if they seem to be going nowhere.

We have an irrational compulsion to keep doors open. It's just the way we're wired. But that doesn't mean we shouldn't try to close them. Think about a fictional episode: Rhett Butler leaving Scarlett O'Hara in *Gone with the Wind*, in the scene when Scarlett clings to him and begs him, "Where shall I go? What shall I do?" Rhett, after enduring too much from Scarlett, and finally having his fill of it, says, "Frankly, my dear, I don't give a damn." It's not by chance that this line has been voted the most memorable in cinematographic history. It's the emphatic closing of a door that gives it widespread appeal. And it should be a reminder to all of us that we have doors—little and big ones—which we ought to shut.

We need to drop out of committees that are a waste of our time and stop sending holiday cards to people who have moved on to other lives and friends. We need to determine whether we really have time to watch basketball and play both golf and squash and keep our family together; perhaps we should put some of these sports behind us. We ought to shut them because they draw energy and

commitment away from the doors that should be left open—and because they drive us crazy.

SUPPOSE YOU'VE CLOSED so many of your doors that you have just two left. I wish I could say that your choices are easier now, but often they are not. In fact, choosing between two things that are similarly attractive is one of the most difficult decisions we can make. This is a situation not just of keeping options open for too long, but of being indecisive to the point of paying for our indecision in the end. Let me use the following story to explain.

A hungry donkey approaches a barn one day looking for hay and discovers two haystacks of identical size at the two opposite sides of the barn. The donkey stands in the middle of the barn between the two haystacks, not knowing which to select. Hours go by, but he still can't make up his mind. Unable to decide, the donkey eventually dies of starvation.*

This story is hypothetical, of course, and casts unfair aspersions on the intelligence of donkeys. A better example might be the U.S. Congress. Congress frequently gridlocks itself, not necessarily with regard to the big picture of particular legislation—the restoration of the nation's aging highways, immigration, improving federal protection of endangered species, etc.—but with regard to the details. Often, to a reasonable person, the party lines on these issues are the equivalent of the two bales of hay. Despite this, or because of it, Congress is frequently left stuck in the middle. Wouldn't a quick decision have been better for everybody?

Here's another example. One of my friends spent three months selecting a digital camera from two nearly identical models. When he finally made his selection, I asked him how many photo opportunities had he missed, how much of his valuable time he had spent making the selection, and how much he would have paid to have digital pictures of his family and friends documenting the last three months. More than the price of the camera, he said. Has something like this ever happened to you?

What my friend (and also the donkey and Congress) failed to do when focusing on the similarities and minor differences between two things was to take into account the *consequences of not deciding.* The donkey failed to consider starving, Congress failed to consider the lives lost while it debated highway legislation, and my friend failed to consider all the great pictures he was missing, not to mention the time he was spending at Best Buy. More important, they all failed to take into consideration the relatively minor differences that would have come with either one of the decisions.

My friend would have been equally happy with either camera; the donkey could have eaten either bale of hay; and the members of Congress could have gone home crowing over their accomplishments, regardless of the slight difference in bills. In other words, they all should have considered the decision an easy one. They could have even flipped a coin (figuratively, in the case of the donkey) and gotten on with their lives. But we don't act that way, because we just can't close those doors.

ALTHOUGH CHOOSING BETWEEN two very similar options should be simple, in fact it is not. I fell victim to this very same problem a few years ago, when I was considering whether to stay at MIT or move to Stanford (I chose MIT in the end). Confronted with these two options, I spent several weeks comparing the two schools closely and found that they were about the same in their overall attractiveness to me. So what did I do? At this stage of my problem, I decided I needed some more information and research on the ground. So I carefully examined both schools. I met people at each place and asked them how they liked it. I checked out neighborhoods and possible schools for our kids. Sumi and I pondered how the two options would fit in with the kind of life we wanted for ourselves. Before long, I was getting so engrossed in this decision that my academic research and productivity began to suffer. Ironically, as I searched for the best place to do my work, my research was being neglected.

Since you have probably invested some money to purchase my wisdom in this book (not to mention time, and the other activities you have given up in the process), I should probably not readily admit that I wound up like the donkey, trying to discriminate between two very similar bales of hay. But I did.

In the end, and with all my foreknowledge of the difficulty in this decision-making process, I was just as predictably irrational as everyone else.

Chapter 10

The Effect of Expectations

Why the Mind Gets What It Expects

Suppose you're a fan of the Philadelphia Eagles and you're watching a football game with a friend who, sadly, grew up in New York City and is a rabid fan of the Giants. You don't really understand why you ever became friends, but after spending a semester in the same dorm room you start liking him, even though you think he's football-challenged.

The Eagles have possession and are down by five points with no time-outs left. It's the fourth quarter, and six seconds are left on the clock. The ball is on the 12-yard line. Four wide receivers line up for the final play. The center hikes the ball to the quarterback who drops back in the pocket. As the receivers sprint toward the end zone, the quarterback throws a high pass just as the time runs out. An Eagles wide receiver near the corner of the end zone dives for the ball and makes a spectacular catch.

The referee signals a touchdown and all the Eagles players run onto the field in celebration. But wait. Did the receiver get both of his feet in? It looks close on the Jumbotron; so the booth calls down for a review. You turn to your friend: "Look at that! What a great catch! He was totally in. Why are they even reviewing it?" Your friend scowls. "That was completely out! I can't believe the ref didn't see it! You must be crazy to think that was in!"

What just happened? Was your friend the Giants fan just experiencing wishful thinking? Was he deceiving himself? Worse, was he lying? Or had his loyalty to his team—and his anticipation of its win—completely, truly, and deeply clouded his judgment?

I was thinking about that one evening, as I strolled through Cambridge and over to MIT's Walker Memorial Building. How could two friends—two honest guys—see one soaring pass in two different ways? In fact, how could any two parties look at precisely the same event and interpret it as supporting their opposing points of view? How could Democrats and Republicans look at a single schoolchild who is unable to read, and take such bitterly different positions on the same issue? How could a couple embroiled in a fight see the causes of their argument so differently?

A friend of mine who had spent time in Belfast, Ireland, as a foreign correspondent, once described a meeting he had arranged with members of the IRA. During the interview, news came that the governor of the Maze prison, a winding row of cell blocks that held many IRA operatives, had been assassinated. The IRA members standing around my friend, quite understandably, received the news with satisfaction—as a victory for their cause. The British, of course, didn't see it in those terms at all. The headlines in London the next day boiled with anger and calls for retribution. In fact, the British saw the event as proof that

discussions with the IRA would lead nowhere and that the IRA should be crushed. I am an Israeli, and no stranger to such cycles of violence. Violence is not rare. It happens so frequently that we rarely stop to ask ourselves why. Why does it happen? Is it an outcome of history, or race, or politics—or is there something fundamentally irrational in us that encourages conflict, that causes us to look at the same event and, depending on our point of view, see it in totally different terms?

Leonard Lee (a professor at Columbia), Shane Frederick (a professor at MIT), and I didn't have any answers to these profound questions. But in a search for the root of this human condition, we decided to set up a series of simple experiments to explore how previously held impressions can cloud our point of view. We came up with a simple test—one in which we would not use religion, politics, or even sports as the indicator. We would use glasses of beer.

YOU REACH THE entrance to Walker by climbing a set of broad steps between towering Greek columns. Once inside (and after turning right), you enter two rooms with carpeting that predates the advent of electric light, furniture to match, and a smell that has the unmistaken promise of alcohol, packs of peanuts, and good company. Welcome to the Muddy Charles—one of MIT's two pubs, and the location for a set of studies that Leonard, Shane, and I would be conducting over the following weeks. The purpose of our experiments would be to determine whether people's expectations influence their views of subsequent events—more specifically, whether bar patrons' expectations for a certain kind of beer would shape their perception of its taste.

Let me explain this further. One of the beers that would be served to the patrons of the Muddy Charles would be Budweiser. The second would be what we fondly called MIT Brew. What's MIT Brew? Basically Budweiser, plus a "secret ingredient"—two drops of balsamic vinegar for each ounce of beer. (Some of the MIT students objected to our calling Budweiser "beer," so in subsequent studies, we used Sam Adams—a substance more readily acknowledged by Bostonians as "beer.")

At about seven that evening, Jeffrey, a second-year PhD student in computer science, was lucky enough to drop by the Muddy Charles. "Can I offer you two small, free samples of beer?" asked Leonard, approaching him. Without much hesitation, Jeffrey agreed, and Leonard led him over to a table that held two pitchers of the foamy stuff, one labeled A and the other B. Jeffrey sampled a mouthful of one of them, swishing it around thoughtfully, and then sampled the other. "Which one would you like a large glass of?" asked Leonard. Jeffrey thought it over. With a free glass in the offing, he wanted to be sure he would be spending his near future with the right malty friend.

Jeffrey chose beer B as the clear winner, and joined his friends (who were in deep conversation over the cannon that a group of MIT students had recently "borrowed" from the Caltech campus). Unbeknownst to Jeffrey, the two beers he had previewed were Budweiser and the MIT Brew—and the one he selected was the vinegar-laced MIT Brew.

A few minutes later, Mina, a visiting student from Estonia, dropped in. "Like a free beer?" asked Leonard. Her reply was a smile and a nod of the head. This

time, Leonard offered more information. Beer A, he explained, was a standard commercial beer, whereas beer B had been doctored with a few drops of balsamic vinegar. Mina tasted the two beers. After finishing the samples (and wrinkling her nose at the vinegar-laced brew B) she gave the nod to beer A. Leonard poured her a large glass of the commercial brew and Mina happily joined her friends at the pub.

Mina and Jeffrey were only two of hundreds of students who participated in this experiment. But their reaction was typical: without foreknowledge about the vinegar, most of them chose the vinegary MIT Brew. But when they knew in advance that the MIT Brew had been laced with balsamic vinegar, their reaction was completely different. At the first taste of the adulterated suds, they wrinkled their noses and requested the standard beer instead. The moral, as you might expect, is that if you tell people up front that something might be distasteful, the odds are good that they will end up agreeing with you—not because their experience tells them so but because of their expectations.

If, at this point in the book, you are considering the establishment of a new brewing company, especially one that specializes in adding some balsamic vinegar to beer, consider the following points: (1) If people read the label, or knew about the ingredient, they would most likely hate your beer. (2) Balsamic vinegar is actually pretty expensive—so even if it makes beer taste better, it may not be worth the investment. Just brew a better beer instead.

BEER WAS JUST the start of our experiments. The MBA students at MIT's Sloan School also drink a lot of coffee. So one week, Elie Ofek (a professor at the Harvard Business School), Marco Bertini (a professor at the London Business School), and I opened an impromptu coffee shop, at which we offered students a free cup of coffee if they would answer a few questions about our brew. A line quickly formed. We handed our participants their cups of coffee and then pointed them to a table set with coffee additives—milk, cream, half-and-half, white sugar, and brown sugar. We also set out some unusual condiments—cloves, nutmeg, orange peel, anise, sweet paprika, and cardamom—for our coffee drinkers to add to their cups as they pleased.

After adding what they wanted (and none of our odd condiments were ever used) and tasting the coffee, the participants filled out a survey form. They indicated how much they liked the coffee, whether they would like it served in the cafeteria in the future, and the maximum price they would be willing to pay for this particular brew.

We kept handing out coffee for the next few days, but from time to time we changed the containers in which the odd condiments were displayed. Sometimes we placed them in beautiful glass-and-metal containers, set on a brushed metal tray with small silver spoons and nicely printed labels. At other times we placed the same odd condiments in white Styrofoam cups. The labels were handwritten in a red felt-tip pen. We went further and not only cut the Styrofoam cups shorter, but gave them jagged, hand-cut edges.

What were the results? No, the fancy containers didn't persuade any of the coffee drinkers to add the odd condiments (I guess we won't be seeing sweet paprika in coffee anytime soon). But the interesting thing was that when the odd

condiments were offered in the fancy containers, the coffee drinkers were much more likely to tell us that they liked the coffee a lot, that they would be willing to pay well for it, and that they would recommend that we should start serving this new blend in the cafeteria. When the coffee ambience looked upscale, in other words, the coffee tasted upscale as well.

WHEN WE BELIEVE beforehand that something will be good, therefore, it generally will be good—and when we think it will be bad, it will bad. But how deep are these influences? Do they just change our beliefs, or do they also change the physiology of the experience itself? In other words, can previous knowledge actually modify the neural activity underlying the taste itself, so that when we expect something to taste good (or bad), it will actually taste that way?

To test this possibility, Leonard, Shane, and I conducted the beer experiments again, but with an important twist. We had already tested our MIT Brew in two ways—by telling our participants about the presence of vinegar in the beer *before* they tasted the brew, and by not telling them anything at all about it. But suppose we initially didn't tell them about the vinegar, then had them taste the beer, then revealed the presence of the vinegar, and then asked for their reactions. Would the placement of the knowledge—coming just after the experience—evoke a different response from what we received when the participants got the knowledge before the experience?

For a moment, let's switch from beer to another example. Suppose you heard that a particular sports car was fantastically exciting to drive, took one for a test drive, and then gave your impressions of the car. Would your impressions be different from those of people who didn't know anything about the sports car, took the test drive, then heard the car was hot, and then wrote down their impressions? In other words, does it matter if knowledge comes before or after the experience? And if so, which type of input is more important—knowledge before the experience, or an input of information after an experience has taken place?

The significance of this question is that if knowledge merely informs us of a state of affairs, then it shouldn't matter whether our participants received the information before or after tasting the beer: in other words, if we told them up front that there was vinegar in the beer, this should affect their review of the beer. And if we told them afterward, that should similarly affect their review. After all, they both got the same bad news about the vinegar-laced beer. This is what we should expect if knowledge merely *informs* us.

On the other hand, if telling our participants about the vinegar at the outset actually reshapes their sensory perceptions to align with this knowledge, then the participants who know about the vinegar up front should have a markedly different opinion of the beer from those who swigged a glass of it, and then were told. Think of it this way. If knowledge actually modifies the taste, then the participants who consumed the beer before they got the news about the vinegar, tasted the beer in the same way as those in the "blind" condition (who knew nothing about the vinegar). They learned about the vinegar only after their taste was established, at which point, if expectations change our experience, it was too late for the knowledge to affect the sensory perceptions.

So, did the students who were told about the vinegar after tasting the beer like it as little as the students who learned about the vinegar before tasting the beer? Or did they like it as much as the students who never learned about the vinegar? What do you think?

As it turned out, the students who found out about the vinegar after drinking the beer liked the beer much better than those who were told about the vinegar up front. In fact, those who were told afterward about the vinegar liked the beer just as much as those who weren't aware that there was any vinegar in the beer at all.

What does this suggest? Let me give you another example. Suppose Aunt Darcy is having a garage sale, trying to get rid of many things she collected during her long life. A car pulls up, some people get out, and before long they are gathered around one of the oil paintings propped up against the wall. Yes, you agree with them, it does look like a fine example of early American primitivism. But do you tell them that Aunt Darcy copied it from a photograph just a few years earlier?

My inclination, since I am an honest, upright person, would be to tell them. But should you tell them before or after they finish admiring the painting? According to our beer studies, you and Aunt Darcy would be better off keeping the information under wraps until after the examination. I'm not saying that this would entice the visitors to pay thousands of dollars for the painting (even though our beer drinkers preferred our vinegar-laced beer as much when they were told after drinking it as when they were not told at all), but it might get you a higher price for Aunt Darcy's work.

By the way, we also tried a more extreme version of this experiment. We told one of two groups in advance about the vinegar (the "before" condition) and told the second group about the vinegar after they had finished the sampling (the "after" condition). Once the tasting was done, rather than offer them a large glass of their choice, we instead gave them a large cup of unadulterated beer, some vinegar, a dropper, and the recipe for the MIT Brew (two drops of balsamic vinegar per ounce of beer). We wanted to see if people would freely add balsamic vinegar to their beer; if so, how much they would use; and how these outcomes would depend on whether the participants tasted the beer before or after knowing about the vinegar.

What happened? Telling the participants about the vinegar after rather than before they tasted the beer doubled the number of participants who decided to add vinegar to their beer. For the participants in the "after" condition, the beer with vinegar didn't taste too bad the first time around (they apparently reasoned), and so they didn't mind giving it another try.*

AS YOU SEE, expectations can influence nearly every aspect of our life. Imagine that you need to hire a caterer for your daughter's wedding. Josephine's Catering boasts about its "delicious Asian-style ginger chicken" and its "flavorful Greek salad with kalamata olives and feta cheese." Another caterer, Culinary Sensations, offers a "succulent organic breast of chicken roasted to perfection and drizzled with a merlot demi-glace, resting in a bed of herbed Israeli couscous" and a "mélange of the freshest roma cherry tomatoes and crisp field greens, paired with

a warm circle of chèvre in a fruity raspberry vinagrette."

Although there is no way to know whether Culinary Sensations' food is any better than Josephine's, the sheer depth of the description may lead us to expect greater things from the simple tomato and goat cheese salad. This, accordingly, increases the chance that we (and our guests, if we give them the description of the dish) will rave over it.

This principle, so useful to caterers, is available to everyone. We can add small things that sound exotic and fashionable to our cooking (chipotle-mango sauces seem all the rage right now, or try buffalo instead of beef). These ingredients might not make the dish any better in a blind taste test; but by changing our expectations, they can effectively influence the taste when we have this pre-knowledge.

These techniques are especially useful when you are inviting people for dinner—or persuading children to try new dishes. By the same token, it might help the taste of the meal if you omit the fact that a certain cake is made from a commercial mix or that you used generic rather than brand-name orange juice in a cocktail, or, especially for children, that Jell-O comes from cow hooves. I am not endorsing the morality of such actions, just pointing to the expected outcomes.

Finally, don't underestimate the power of presentation. There's a reason that learning to present food artfully on the plate is as important in culinary school as learning to grill and fry. Even when you buy take-out, try removing the Styrofoam packaging and placing the food on some nice dishes and garnishing it (especially if you have company); this can make all the difference.

One more piece of advice: If you want to enhance the experience of your guests, invest in a nice set of wineglasses.

Moreover, if you're really serious about your wine, you may want to go all out and purchase the glasses that are specific to burgundies, chardonnays, champagne, etc. Each type of glass is supposed to provide the appropriate environment, which should bring out the best in these wines (even though controlled studies find that the shape of the glass makes no difference at all in an objective blind taste test, that doesn't stop people from perceiving a significant difference when they are handed the "correct glass"). Moreover, if you forget that the shape of the glass really has no effect on the taste of the wine, you yourself may be able to better enjoy the wine you consume in the appropriately shaped fancy glasses.

Expectations, of course, are not limited to food. When you invite people to a movie, you can increase their enjoyment by mentioning that it got great reviews. This is also essential for building the reputation of a brand or product. That's what marketing is all about—providing information that will heighten someone's anticipated and real pleasure. But do expectations created by marketing really change our enjoyment?

I'm sure you remember the famous "Pepsi Challenge" ads on television (or at least you may have heard of them). The ads consisted of people chosen at random, tasting Coke and Pepsi and remarking about which they liked better. These ads, created by Pepsi, announced that people preferred Pepsi to Coke. At the same time, the ads for Coke proclaimed that people preferred Coke to Pepsi.

How could that be? Were the two companies fudging their statistics?

The answer is in the different ways the two companies evaluated their products. Coke's market research was said to be based on consumers' preferences when they could see what they were drinking, including the famous red trademark, while Pepsi ran its challenge using blind tasting and standard plastic cups marked M and Q. Could it be that Pepsi tasted better in a blind taste test but that Coke tasted better in a non-blind (sighted) test?

To better understand the puzzle of Coke versus Pepsi, a terrific group of neuroscientists—Sam McClure, Jian Li, Damon Tomlin, Kim Cypert, Latané Montague, and Read Montague—conducted their own blind and non-blind taste test of Coke and Pepsi. The modern twist on this test was supplied by a functional magnetic resonance imaging (fMRI) machine. With this machine, the researchers could monitor the activity of the participants' brains while they consumed the drinks.

Tasting drinks while one is in an fMRI is not simple, by the way, because a person whose brain is being scanned must lie perfectly still. To overcome this problem, Sam and his colleagues put a long plastic tube into the mouth of each participant, and from a distance injected the appropriate drink (Pepsi or Coke) through the tube into their mouths. As the participants received a drink, they were also presented with visual information indicating either that Coke was coming, that Pepsi was coming, or that an unknown drink was coming. This way the researchers could observe the brain activation of the participants while they consumed Coke and Pepsi, both when they knew which beverage they were drinking and when they did not.

What were the results? In line with the Coke and Pepsi "challenges," it turned out that the brain activation of the participants was different depending on whether the name of the drink was revealed or not. This is what happened: Whenever a person received a squirt of Coke or Pepsi, the center of the brain associated with strong feelings of emotional connection—called the ventromedial prefrontal cortex, VMPFC—was stimulated. But when the participants knew they were going to get a squirt of Coke, something additional happened. This time, the frontal area of the brain—the dorsolateral aspect of the prefrontal cortex, DLPFC, an area involved in higher human brain functions like working memory, associations, and higher-order cognitions and ideas—was also activated. It happened with Pepsi—but even more so with Coke (and, naturally, the response was stronger in people who had a stronger preference for Coke).

The reaction of the brain to the basic hedonic value of the drinks (essentially sugar) turned out to be similar for the two drinks. But the advantage of Coke over Pepsi was due to Cokes's brand—which activated the higher-order brain mechanisms. These associations, then, and not the chemical properties of the drink, gave Coke an advantage in the marketplace.

It is also interesting to consider the ways in which the frontal part of the brain is connected to the pleasure center. There is a dopamine link by which the front part of the brain projects and activates the pleasure centers. This is probably why Coke was liked more when the brand was known—the associations were more powerful, allowing the part of the brain that represents these associations to enhance activity in the brain's pleasure center. This should be good news to any

ad agency, of course, because it means that the bright red can, swirling script, and the myriad messages that have come down to consumers over the years (such as "Things go better with . . .") are as much responsible for our love of Coke as the brown bubbly stuff itself.

EXPECTATIONS ALSO SHAPE stereotypes. A stereotype, after all, is a way of categorizing information, in the hope of predicting experiences. The brain cannot start from scratch at every new situation. It must build on what it has seen before. For that reason, stereotypes are not intrinsically malevolent. They provide shortcuts in our never-ending attempt to make sense of complicated surroundings. This is why we have the expectation that an elderly person will need help using a computer or that a student at Harvard will be intelligent.* But because a stereotype provides us with specific expectations about members of a group, it can also unfavorably influence both our perceptions and our behavior.

Research on stereotypes shows not only that we react differently when we have a stereotype of a certain group of people, but also that stereotyped people themselves react differently when they are aware of the label that they are forced to wear (in psychological parlance, they are "primed" with this label). One stereotype of Asian-Americans, for instance, is that they are especially gifted in mathematics and science. A common stereotype of females is that they are weak in mathematics. This means that Asian-American women could be influenced by both notions.

In fact, they are. In a remarkable experiment, Margaret Shin, Todd Pittinsky, and Nalini Ambady asked Asian-American women to take an objective math exam. But first they divided the women into two groups. The women in one group were asked questions related to their gender. For example, they were asked about their opinions and preferences regarding coed dorms, thereby priming their thoughts for gender-related issues. The women in the second group were asked questions related to their race. These questions referred to the languages they knew, the languages they spoke at home, and their family's history in the United States, thereby priming the women's thoughts for race-related issues.

The performance of the two groups differed in a way that matched the stereotypes of both women and Asian-Americans. Those who had been reminded that they were women performed worse than those who had been reminded that they were Asian-American. These results show that even our own behavior can be influenced by our stereotypes, and that activation of stereotypes can depend on our current state of mind and how we view ourselves at the moment.

Perhaps even more astoundingly, stereotypes can also affect the behavior of people who are not even part of a stereotyped group. In one notable study, John Bargh, Mark Chen, and Lara Burrows had participants complete a scrambled-sentence task, rearranging the order of words to form sentences (we discussed this type of task in Chapter 4). For some of the participants, the task was based on words such as *aggressive*, *rude, annoying*, and *intrude*. For others, the task was based on words such as *honor*, *considerate*, *polite*, and *sensitive*. The goal of these two lists was to prime the participants to think about politeness or rudeness as a result of constructing sentences from these words (this is a very common technique in social psychology, and it works amazingly well).

After the participants completed the scrambled-sentence task, they went to another laboratory to participate in what was purportedly a second task. When they arrived at the second laboratory, they found the experimenter apparently in the midst of trying to explain the task to an uncomprehending participant who was just not getting it (this supposed participant was in fact not a real participant but a confederate working for the experimenter). How long do you think it took the real participants to interrupt the conversation and ask what they should do next?

The amount of waiting depended on what type of words had been involved in the scrambled-sentence task. Those who had worked with the set of polite words patiently waited for about 9.3 minutes before they interrupted, whereas those who had worked with the set of rude words waited only about 5.5 minutes before interrupting.

A second experiment tested the same general idea by priming the concept of the elderly, using words such as *Florida*, *bingo*, and *ancient*. After the participants in this experiment completed the scrambled-sentence task, they left the room, thinking that they had finished the experiment—but in fact the crux of the study was just beginning. What truly interested the researchers was how long it would take the participants to walk down the hallway as they left the building. Sure enough, the participants in the experimental group were affected by the "elderly" words: their walking speed was considerably slower than that of a control group who had not been primed. And remember, the primed participants were not themselves elderly people being reminded of their frailty—they were undergraduate students at NYU.

ALL THESE EXPERIMENTS teach us that expectations are more than the mere anticipation of a boost from a fizzy Coke. Expectations enable us to make sense of a conversation in a noisy room, despite the loss of a word here and there, and likewise, to be able to read text messages on our cell phones, despite the fact that some of the words are scrambled. And although expectations can make us look foolish from time to time, they are also very powerful and useful.

So what about our football fans and the game-winning pass? Although both friends were watching the same game, they were doing so through markedly different lenses. One saw the pass as in bounds. The other saw it as out. In sports, such arguments are not particularly damaging—in fact, they can be fun. The problem is that these same biased processes can influence how we experience other aspects of our world. These biased processes are in fact a major source of escalation in almost every conflict, whether Israeli-Palestinian, American-Iraqi, Serbian-Croatian, or Indian-Pakistani.

In all these conflicts, individuals from both sides can read similar history books and even have the same facts taught to them, yet it is very unusual to find individuals who would agree about who started the conflict, who is to blame, who should make the next concession, etc. In such matters, our investment in our beliefs is much stronger than any affiliation to sport teams, and so we hold on to these beliefs tenaciously. Thus the likelihood of agreement about "the facts" becomes smaller and smaller as personal investment in the problem grows. This is clearly disturbing. We like to think that sitting at the same table together will

help us hammer out our differences and that concessions will soon follow. But history has shown us that this is an unlikely outcome; and now we know the reason for this catastrophic failure.

But there's reason for hope. In our experiments, tasting beer without knowing about the vinegar, or learning about the vinegar after the beer was tasted, allowed the true flavor to come out. The same approach should be used to settle arguments: The perspective of each side is presented without the affiliation —the facts are revealed, but not which party took which actions. This type of "blind" condition might help us better recognize the truth.

When stripping away our preconceptions and our previous knowledge is not possible, perhaps we can at least acknowledge that we are all biased. If we acknowledge that we are trapped within our perspective, which partially blinds us to the truth, we may be able to accept the idea that conflicts generally require a neutral third party—who has not been tainted with our expectations—to set down the rules and regulations. Of course, accepting the word of a third party is not easy and not always possible; but when it is possible, it can yield substantial benefits. And for that reason alone, we must continue to try.

Reflections on Expectations: Music and Food

Imagine walking into a truck stop off a deserted stretch of Interstate 95 at nine o'clock in the evening. You've been driving for six hours. You are tired and still have a long drive ahead of you. You need a bite to eat and want to be out of the car for a bit, so you walk into what appears to be a restaurant of sorts. It has the usual cracked-vinyl-covered booths and fluorescent lighting. The coffee-stained tabletops leave you a bit wary. Still, you think, "Fine, no one can screw up a hamburger that badly." You reach for the menu, conveniently stashed behind an empty napkin dispenser, only to discover this is no ordinary greasy spoon. Instead of hamburgers and chicken sandwiches, you're astonished to see that the menu offers foie gras au torchon, truffle pâté with frisée and fennel marmalade, gougères with duck confit, quail à la crapaudine, and so on.

Items like this would be no surprise in even a small Manhattan restaurant, of course. And it is possible that the chef got tired of Manhattan, moved to the middle of nowhere, and now cooks for whoever happens through. So is there a key difference between ordering gougères with duck confit in Manhattan and ordering it at an isolated truck stop on I-95? If you encountered such French delicacies at the truck stop, would you be brave enough to try them? Suppose the prices were not listed on the menu. What would you be willing to pay for an appetizer or an entrée? And if you ate it, would you enjoy it as much as you might if you were eating the same food in Manhattan?

On the basis of what we learned from Chapter 10, the answers are simple. Ambience and expectations do add a great deal to our enjoyment. You would expect less in such an environment, and as a consequence you would enjoy the experience at the truck stop less, even if you had the identical foie gras au torchon in both places. Likewise, if you knew that pâté is largely made of run-of-the-mill goose liver and butter* rather than super special ingredients, you would enjoy it much less.

A FEW YEARS ago the folks at the *Washington Post* were curious about the same basic

topic and decided to run an experiment.[11] Instead of food, they used music. The experimental question was this: can outstanding art shine through a filter of mundane and dingy expectation?

Journalist Gene Weingarten asked Joshua Bell, generally considered one of the best violinists in the world, to pose as a street performer and play some of the finest music ever composed* at a Metro station in Washington, D.C., during the morning rush hour. Would people notice that this guy was better than most buskers? Would they stop to listen? Would they throw a dollar or two his way? Would you?

If you were like 98 percent of the people who passed through L'Enfant Plaza Station that morning, you would have hurried by, oblivious of the performance. Only 27 out of 1,097 (2.5 percent) put money into Bell's open Stradivarius violin case and only 7 (0.5 percent) stopped to listen for more than a minute. Bell played for a little less than an hour and made about $32, which is probably not bad for your basic street performer, but no doubt humbling to a man used to making far, far more for one minute of playing.

Weingarten interviewed a number of people who passed through the station that morning. Of the people who stopped, one recognized Bell from a performance the night before. Another was a serious violinist himself. Another was a Metro worker who, after years of listening to ordinary, albeit occasionally talented, buskers, discerned that Bell was better than average. Aside from these few—and disturbingly to classical music fans, and Bell's fans in particular—people did not stop to listen. Many didn't even look at Bell. When interviewed, passersby said either that they didn't notice the music at all, or that it sounded like a slightly better than average street performer playing everyday classical music. No one expected a world-class musician to be playing technically dazzling pieces in a Metro station. Accordingly, and for the most part, they didn't hear one.

Sometime later I met Joshua Bell and asked him about this experience. In particular, I wanted to know how he felt about being overlooked and ignored by so many people. He responded that he was really not all that surprised, and admitted that expectation is an important part of the way we experience music. Bell told me that it takes an appropriate setting to help people appreciate a live classical music performance—a listener needs to be sitting in a comfortable, faux velvet seat, and surrounded by the acoustics of a concert hall. And when people adorn themselves in silk, perfume, and cashmere, they seem to appreciate the costly performance much more.

"What if we did the opposite experiment?" I asked. "What if we put a mediocre player in Carnegie Hall with the Berlin Philharmonic? The expectations would be very high but the quality would not. Would people discern the difference and would their pleasure be quashed?" Bell thought for a moment. "In this case," he said, "the expectations would triumph over the experience." Furthermore, he said he could think of a few people who were not great violinists but received wild applause because they were in the right environment.

In the end, I wasn't convinced by Bell's nonchalance about his Metro performance. After all, time heals all wounds, and one of the ways time works in our favor is to help us either forget or misremember the past in a way that makes us feel better about ourselves. Besides, not being surprised that people were too

busy to notice his performance must have helped Bell avoid the violinist's version of the old question: "If a tree falls in the forest, and no one is around to hear it, does it make a sound?"

The following day, sitting in the Monterey auditorium, I had the opportunity to listen to Joshua Bell play Bach's famous "Chaconne"—the same wonderful piece that he had played for his commuter audience. I closed my eyes and imagined that, instead of listening to a great violinist, I was hearing a mediocre fifteen-year-old kid play a Stradivarius. I'm no connoisseur, but I swear I could hear a few off-key patches, and some squeaks of the strings suddenly became audible. Perhaps the squeaks were part of Bach's composition, just an inevitable part of playing a stringed instrument, or maybe they were a result of playing in an auditorium rather than a proper concert hall. I could easily imagine how an untrained listener such as myself might attribute these sounds to mistakes of a mediocre player, especially if the player is standing in a bustling train station during rush hour.

At the end of his performance, Bell got a long standing ovation. Though I had enjoyed the performance, I wondered how much the ovation was a reward for his performance and how much was due to the audience's expectations. I'm not questioning the level of Bell's (or anyone's) talent. The point is that we don't really understand the role expectations play in the way we experience and evaluate art, literature, drama, architecture, food, wine—anything, really.

I THINK THAT the role of expectations may have been captured best by one of my favorite authors. In Jerome K. Jerome's 1889 comic novella *Three Men in a Boat*, the narrator and his two traveling companions are at a party at an inn. The discussion happens to turn to comic songs. Two young men, outsiders who lack the aristocratic manners of the other partygoers, assure them that a song by the renowned German comic Herr Slossenn Boschen is the funniest of all, and that Herr Boschen happens to be staying at the very same inn. Perhaps he might be persuaded to play one of his songs for them?

Herr Boschen is quite glad to play for them, and since only the two young men understand German, though everyone else pretends to understand it, the rest of the audience take their cues from them. As the two young men shriek with laughter, so do they. Some members of the audience go a step further and from time to time laugh on their own, pretending to have understood a bit of subtle humor missed by the
others.

In reality, it turns out that Herr Boschen is a renowned tragedian and is doing his best to deliver a dramatic, emotionally laden song—while the two young men laugh every few notes in order to fool the rest of the guests into believing that such is the style of German comedy. Confused, Herr Boschen presses on. But when he finishes singing, he leaps up from the piano and pours a stream of German obscenities over his listeners.

Ignorant of German and Germany's musical conventions, the audience members do the next best thing and follow the purported expertise of the two outsiders, laugh on cue from them, and believe that the whole performance, including Boschen's temper tantrum, is uproariously funny. Overall the audience enjoys the performance a great deal.

Jerome's story is exaggerated, but in truth, this is how most of us navigate the world. Across many domains of life, expectations play a huge role in the way we

end up experiencing things. Think about the *Mona Lisa*. Why is this portrait so beautiful, and why is the woman's smile mysterious? Can you discern the technique and talent it took for Leonardo da Vinci to create it? For most of us the painting is beautiful, and the smile mysterious, because we are told it is so. In the absence of expertise or perfect information, we look for social cues to help us figure out how much we are, or should be, impressed, and our expectations take care of the rest.

THE BRILLIANT SATIRIST Alexander Pope once wrote: "Blessed is he who expects nothing, for he shall never be disappointed." To me, it seems that Pope's advice is the best way to live an objective life. Clearly, it is also very helpful in eliminating the effects of negative expectations. But what about positive expectations? If I listen to Joshua Bell with no expectations, the experience is not going to be nearly as satisfying or pleasurable as if I listen to him and say to myself, "My god, how lucky I am to be listening to Joshua Bell play live in front of me." My knowledge that Bell is one of the best players in the world contributes immeasurably to my pleasure.

As it turns out, positive expectations allow us to enjoy things more and improve our perception of the world around us. The danger of expecting nothing is that, in the end, it might be all we'll get.

Chapter 11

The Power of Price

Why a 50-Cent Aspirin Can Do What a Penny Aspirin Can't

If you were living in 1950 and had chest pain, your cardiologist might well have suggested a procedure for angina pectoris called internal mammary artery ligation. In this operation, the patient is anesthetized, the chest is opened at the sternum, and the internal mammary artery is tied off. Voilà! Pressure to the pericardiophrenic arteries is raised, blood flow to the myocardium is improved, and everyone goes home happy.[12]

This was an apparently successful operation, and it had been a popular one for the previous 20 years. But one day in 1955, a cardiologist in Seattle, Leonard Cobb, and a few colleagues became suspicious. Was it really an effective procedure? Did it really work? Cobb decided to try to prove the efficacy of the procedure in a very bold way: he would perform the operation on half his patients, and fake the procedure on the other half. Then he would see which group felt better, and whose health actually improved. In other words, after 25 years of filleting patients like fish, heart surgeons would finally get a scientifically controlled surgical trial to see how effective the procedure really was.

To carry out this test, Dr. Cobb performed the traditional procedure on some of the patients, and placebo surgery on the others. The real surgery meant opening the patient up and tying up the internal mammary artery. In the placebo procedure, the surgeon merely cut into the patient's flesh with a scalpel, leaving two incisions. Nothing else was done.

The results were startling. Both the patients who did have their mammary arteries constricted and those who didn't reported immediate relief from their chest pain. In both groups, the relief lasted about three months—and then complaints about chest pain returned. Meanwhile, electrocardiograms showed no difference between those who had undergone the real operation and those who got the placebo operation. In other words, the traditional procedure seemed to provide some short-term relief—but so did the placebo. In the end, neither procedure provided significant long-term relief.

More recently a different medical procedure was submitted to a similar test, with surprisingly similar results. As early as 1993, J. B. Moseley, an orthopedic surgeon, had increasing doubts about the use of arthroscopic surgery for a particular arthritic affliction of the knee. Did the procedure really work? Recruiting 180 patients with osteoarthritis from the veterans' hospital in Houston, Texas, Dr. Moseley and his colleagues divided them into three groups.

One group got the standard treatment: anesthetic, three incisions, scopes inserted, cartilage removed, correction of soft-tissue problems, and 10 liters of saline washed through the knee. The second group got anesthesia, three incisions,

scopes inserted, and 10 liters of saline, but no cartilage was removed. The third group—the placebo group—looked from the outside like the other two treatments (anesthesia, incisions, etc.); and the procedure took the same amount of time; but no instruments were inserted into the knee. In other words, this was simulated surgery.[13]

For two years following the surgeries, all three groups (which consisted of volunteers, as in any other placebo experiment) were tested for a lessening of their pain, and for the amount of time it took them to walk and climb stairs. How did they do? The groups that had the full surgery and the arthroscopic lavage were delighted, and said they would recommend the surgery to their families and friends. But strangely—and here was the bombshell—the placebo group also got relief from pain and improvements in walking—to the same extent, in fact, as those who had the actual operations. Reacting to this startling conclusion, Dr. Nelda Wray, one of the authors of the Moseley study, noted, "The fact that the effectiveness of arthroscopic lavage and debridement in patients with osteoarthritis of the knee is no greater than that of placebo surgery makes us question whether the $1 billion spent on these procedures might be put to better use."

If you assume that a firestorm must have followed this report, you're right. When the study appeared on July 11, 2002, as the lead article in the *New England Journal of Medicine*, some doctors screamed foul and questioned the method and results of the study. In response, Dr. Moseley argued that his study had been carefully designed and carried out. "Surgeons . . . who routinely perform arthroscopy are undoubtedly embarrassed at the prospect that the placebo effect —not surgical skill—is responsible for patient improvement after the surgeries they perform. As you might imagine, these surgeons are going to great lengths to try to discredit our study."

Regardless of the extent to which you believe the results of this study, it is clear that we should be more suspicious about arthroscopic surgery for this particular condition, and at the same time increase the burden of proof for medical procedures in general.

IN THE PREVIOUS chapter we saw that expectations change the way we perceive and appreciate experiences. Exploring the placebo effect in this chapter, we'll see not only that beliefs and expectations affect how we perceive and interpret sights, tastes, and other sensory phenomena, but also that our expectations can affect us by altering our subjective and even objective experiences—sometimes profoundly so.

Most important, I want to probe an aspect of placebos that is not yet fully understood. It is the role that *price* plays in this phenomenon. Does a pricey medicine make us feel better than a cheap medicine? Can it actually make us *physiologically* better than a cheaper brand? What about expensive procedures, and new-generation apparatuses, such as digital pacemakers and high-tech stents? Does their price influence their efficacy? And if so, does this mean that the bill for health care in America will continue to soar? Well, let's start at the beginning.

PLACEBO COMES FROM the Latin for "I shall please." The term was used in the fourteenth century to refer to sham mourners who were hired to wail and sob for the deceased at funerals. By 1785 it appeared in the *New Medical Dictionary*, attached to marginal practices of medicine.

One of the earliest recorded examples of the placebo effect in medical literature dates from 1794. An Italian physician named Gerbi made an odd discovery: when he rubbed the secretions of a certain type of worm on an aching tooth, the pain went away for a year. Gerbi went on to treat hundreds of patients with the worm secretions, keeping meticulous records of their reactions. Of his patients, 68 percent reported that their pain, too, went away for a year. We don't know the full story of Gerbi and his worm secretions, but we have a pretty good idea that the secretions really had nothing to do with curing toothaches. The point is that Gerbi believed they helped—and so did a majority of his patients.

Of course, Gerbi's worm secretion wasn't the only placebo in the market. Before recent times, almost all medicines were placebos. Eye of the toad, wing of the bat, dried fox lungs, mercury, mineral water, cocaine, an electric current: these were all touted as suitable cures for various ailments. When Lincoln lay dying across the street from Ford's Theater, it is said that his physician applied a bit of "mummy paint" to the wounds. Egyptian mummy, ground to a powder, was believed to be a remedy for epilepsy, abscesses, rashes, fractures, paralysis, migraine, ulcers, and many other things. As late as 1908, "genuine Egyptian mummy" could be ordered through the E. Merck catalog—and it's probably still in use somewhere today.[14]

Mummy powder wasn't the most macabre of medicines, though. One seventeenth-century recipe for a "cure all" medication advised: "Take the fresh corpse of a red-haired, uninjured, unblemished man, 24 years old and killed no more than one day before, preferably by hanging, breaking on the wheel or impaling. . . . Leave it one day and one night in the light of the sun and the moon, then cut into shreds or rough strips. Sprinkle on a little powder of myrrh and aloes, to prevent it from being too bitter."

We may think we're different now. But we're not. Placebos still work their magic on us. For years, surgeons cut remnants of scar tissue out of the abdomen, for instance, imagining that this procedure addressed chronic abdominal pain—until researchers faked the procedure in controlled studies and patients reported equal relief.[15] Encainide, flecainide, and mexiletine were widely prescribed off-label drugs for irregular heartbeat—and were later found to cause cardiac arrest.[16] When researchers tested the effect of the six leading antidepressants, they noted that 75 percent of the effect was duplicated in placebo controls.[17] The same was true of brain surgery for Parkinson's disease.[18] When physicians drilled holes in the skulls of several patients without performing the full procedure, to test its efficacy, the patients who received the sham surgery had the same outcome as those who received the full procedure. And of course the list goes on and on.

One could defend these modern procedures and compounds by noting that they were developed with the best intentions. This is true. But so were the applications of Egyptian mummy, to a great extent. And sometimes, the mummy powder worked just as well as (or at least no worse than) whatever else was used.

The truth is that placebos run on the power of suggestion. They are effective because people believe in them. You see your doctor and you feel better. You pop a pill and you feel better. And if your doctor is a highly acclaimed specialist, or your prescription is for a new wonder drug of some kind, you feel even better. But how does suggestion influence us?

IN GENERAL, TWO mechanisms shape the expectations that make placebos work. One is belief—our confidence or faith in the drug, the procedure, or the caregiver. Sometimes just the fact that a doctor or nurse is paying attention to us and reassuring us not only makes us feel better but also triggers our internal healing processes. Even a doctor's enthusiasm for a particular treatment or procedure may predispose us toward a positive outcome.

The second mechanism is conditioning. Like Pavlov's famous dogs (that learned to salivate at the ring of a bell), the body builds up expectancy after repeated experiences and releases various chemicals to prepare us for the future. Suppose you've ordered pizza night after night. When the deliveryman presses the doorbell, your digestive juices start flowing even before you can smell the pie. Or suppose that you are snuggled up on the couch with your loved one. As you're sitting there staring into a crackling fire, the prospect of sex releases endorphins, preparing you for what is to come next, and sending your sense of well-being into the stratosphere.

In the case of pain, expectation can unleash hormones and neurotransmitters, such as endorphins and opiates, that not only block agony but produce exuberant highs (endorphins trigger the same receptors as morphine). I vividly recall lying in the burn ward in terrible pain. As soon as I saw the nurse approaching, with a needle almost dripping with painkiller, what relief! My brain began secreting pain-dulling opioids, even before the needle broke my skin.

Thus familiarity may or may not breed contempt, but it definitely breeds expectations. Branding, packaging, and the reassurance of the caregiver can make us feel better. But what about price? Can the price of a drug also affect our response to it?

ON THE BASIS of price alone, it is easy to imagine that a $4,000 couch will be more comfortable than a $400 couch; that a pair of designer jeans will be better stitched and more comfortable than a pair from Wal-Mart; that a high-grade electric sander will work better than a low-grade sander; and that the roast duck at the Imperial Dynasty (for $19.95) is substantially better than the roast duck at Wong's Noodle Shop (for $10.95). But can such implied difference in quality influence the actual experience, and can such influence also apply to objective experiences such as our reactions to pharmaceuticals?

For instance, would a cheaper painkiller be less effective than a more expensive one? Would your winter cold feel worse if you took a discount cold medicine than if you took an expensive one? Would your asthma respond less well to a generic drug than to the latest brand-name on the market? In other words, are drugs like Chinese food, sofas, blue jeans, and tools? Can we assume that high price means higher quality, and do our expectations translate into the

objective efficacy of the product?

This is a particularly important question. The fact is that you can get away with cheaper Chinese food and less expensive jeans. With some self-control, we can usually steer ourselves away from the most expensive brands. But will you really look for bargains when it comes to your health? Putting the common cold aside for the moment, are many of us going to pinch pennies when our lives are at risk? No—we want the best, for ourselves, our children, and our loved ones.

If we want the best for ourselves, does an expensive drug make us feel better than a cheaper drug? Does cost really make a difference in how we feel? In a series of experiments a few years ago, that's what Rebecca Waber (a graduate student at MIT), Baba Shiv (a professor at Stanford), Ziv Carmon, and I decided to find out.

IMAGINE THAT YOU'RE taking part in an experiment to test the efficacy of a new painkiller called Veladone-Rx. (The actual experiment involved about 100 adult Bostonians, but for now, we'll let you take their place.)

You arrive at the MIT Media Lab in the morning. Taya Leary, a young woman wearing a crisp business suit (this is in stark contrast to the usual attire of the students and faculty at MIT), greets you warmly, with a hint of a Russian accent. A photo ID identifies Taya as a representative of Vel Pharmaceuticals. She invites you to spend a moment reading a brochure about Veladone-Rx. Glancing around, you note that the room looks like a medical office: stale copies of *Time* and *Newsweek* are scattered around; brochures for Veladone-Rx are spread out on the table; and nearby is a cup of pens, with the drug's handsome logo. "Veladone is an exciting new medication in the opioid family," you read. "Clinical studies show that over 92 percent of patients receiving Veladone in double-blind controlled studies reported significant pain relief within only 10 minutes, and that pain relief lasted up to eight hours." And how much does it cost? According to the brochure, $2.50 for a single dose.

Once you finish reading the brochure, Taya calls in Rebecca Waber and leaves the room. Rebecca, wearing the white coat of a lab technician, with a stethoscope hanging from her neck, asks you a set of questions about your medical condition and your family's medical history. She listens to your heart and measures your blood pressure. Then she hooks you up to a complicated-looking machine. The electrodes running from the machine, greased with a green electrode gel, encircle your wrists. This is an electrical shock generator, she explains, and it is how we will test your perception and tolerance of pain.

With her hand on the switch, Rebecca sends a series of electrical shocks through the wires and into the electrodes. The initial shocks are merely annoying. Then they become painful, more painful, and finally so painful that your eyes fly open and your heart begins to race. She records your reactions. Now she starts delivering a new set of electrical shocks. This time she administers a set of charges that fluctuate randomly in intensity: some are very painful and some merely irritating. Following each one, you are asked to record, using the computer in front of you, the amount of pain you felt. You use the mouse to click on a line that ranges from "no pain at all" to "the worst pain imaginable" (this is called a "visual pain analog").

When this part of the torture ends, you look up. Rebecca is standing before you with a Veladone capsule in one hand and a cup of water in the other. “It will take about 15 minutes for the drug to reach its maximal effect,” she says. You gulp it down, and then move to a chair in the corner, where you look at the old copies of *Time* and *Newsweek* until the pill takes effect.

Fifteen minutes later Rebecca, smearing the electrodes with the same green electrode gel, cheerfully asks, “Ready for the next step?” You say nervously, “As ready as I can be.” You’re hooked up to the machine again, and the shocks begin. As before, you record the intensity of the pain after each shock. But this time it’s different. It must be the Veladone-Rx! The pain doesn’t feel nearly as bad. You leave with a pretty high opinion of Veladone. In fact, you hope to see it in the neighborhood drugstore before long.

Indeed, that’s what most of our participants found. Almost all of them reported less pain when they experienced the electrical shocks under the influence of Veladone. Very interesting—considering that Veladone was just a capsule of vitamin C.

FROM THIS EXPERIMENT, we saw that our capsule did have a placebo effect. But suppose we priced the Veladone differently. Suppose we discounted the price of a capsule of Veladone-Rx from $2.50 to just 10 cents. Would our participants react differently?

In our next test, we changed the brochure, scratching out the original price ($2.50 per pill) and inserting a new discount price of 10 cents. Did this change our participants’
reaction? Indeed. At $2.50 almost all our participants experienced pain relief from the pill. But when the price was dropped to 10 cents, only half of them did.

Moreover, it turns out that this relationship between price and placebo effect was not the same for all participants, and the effect was particularly pronounced for people who had more experience with recent pain. In other words, for people who had experienced more pain, and thus depended more on pain medications, the relationship was more pronounced: they got even less benefit when the price was discounted. When it comes to medicines, then, we learned that you get what you pay for. Price can change the experience.

INCIDENTALLY, WE GOT corroborating results in another test, a study we conducted one miserably cold winter at the University of Iowa. In this case we asked a group of students to keep track of whether they used full-price or discount medicines for their seasonal colds, and if so, how well those remedies worked. At the end of the semester, 13 participants said they’d paid list price and 16 had bought discount drugs. Which group felt better? I think you can guess by now: the 13 who paid the list price reported significantly better medical outcomes than the 16 who bought the medication at a discount. And so, in over-the-counter cold medication, what you pay is often what you get.

FROM OUR EXPERIMENTS with our “pharmaceuticals” we saw how prices drive the placebo effect. But do prices affect everyday consumer products as well? We

found the perfect subject in SoBe Adrenaline Rush, a beverage that promises to "elevate your game" and impart "superior functionality."

In our first experiment, we stationed ourselves at the entrance of the university's gym, offering SoBe. The first group of students paid the regular price for the drink. A second group also purchased the drink, but for them the price was marked down to about one-third of the regular price. After the students exercised, we asked them if they felt more or less fatigued relative to how they normally felt after their usual workouts. Both groups of students who drank the SoBe indicated that they were somewhat less fatigued than usual. That seemed plausible, especially considering the hefty shot of caffeine in each bottle of SoBe.

But it was the effect of the price, not the effect of the caffeine, that we were after. Would higher-priced SoBe reduce fatigue better than the discounted SoBe? As you can imagine from the experiment with Veladone, it did. The students who drank the higher-priced beverage reported less fatigue than those who had the discounted drink.

These results were interesting, but they were based on the participants' impressions of their own state—their subjective reports. How could we test SoBe more directly and objectively? We found a way: SoBe claims to provide "energy for your mind." So we decided to test that claim by using a series of anagrams.

It would work like this. Half of the students would buy their SoBe at full price, and the other half would buy it at a discount. (We actually charged their student accounts, so in fact their parents were the ones paying for it.) After consuming the drinks, the students would be asked to watch a movie for 10 minutes (to allow the effects of the beverage to sink in, we explained). Then we would give each of them a 15-word puzzle, with 30 minutes to solve as many of the problems as they could. (For example, when given the set TUPPIL, participants had to rearrange it to PULPIT—or they would have to rearrange FRIVEY, RENCOR, and SVALIE to get . . .).

We had already established a baseline, having given the word-puzzle test to a group of students who had not drunk SoBe. This group got on average nine of the 15 items right. What happened when we gave the puzzles to the students who drank SoBe? The students who had bought it at the full price also got on average about nine answers right—this was no different from the outcome for those who had no drink at all. But more interesting were the answers from the discounted SoBe group: they averaged 6.5 questions right. What can we gather from this? Price does make a difference, and in this case the difference was a gap of about 28 percent in performance on the word puzzles.

So SoBe didn't make anyone smarter. Does this mean that the product itself is a dud (at least in terms of solving word puzzles)? To answer this question, we devised another test. The following message was printed on the cover of the quiz booklet: "Drinks such as SoBe have been shown to improve mental functioning," we noted, "resulting in improved performance on tasks such as solving puzzles." We also added some fictional information, stating that SoBe's Web site referred to more than 50 scientific studies supporting its claims.

What happened? The group that had the full-price drinks still performed better than those that had the discounted drinks. But the message on the quiz booklet also exerted some influence. Both the discount group and the full-price

group, having absorbed the information and having been primed to expect success, did better than the groups whose quiz cover didn't have the message. And this time the SoBe did make people smarter. When we hyped the drink by stating that 50 scientific studies found SoBe to improve mental functioning, those who got the drink at the discount price improved their score (in answering additional questions) by 0.6, but those who got both the hype and the full price improved by 3.3 additional questions. In other words, the message on the bottle (and the quiz cover) as well as the price was arguably more powerful than the beverage inside.

ARE WE DOOMED, then, to get lower benefits every time we get a discount? If we rely on our irrational instincts, we will. If we see a discounted item, we will instinctively assume that its quality is less than that of a full-price item—and then in fact we will make it so. What's the remedy? If we stop and rationally consider the product versus the price, will we be able to break free of the unconscious urge to discount quality along with price?

We tried this in a series of experiments, and found that consumers who stop to reflect about the relationship between price and quality are far less likely to assume that a discounted drink is less effective (and, consequently, they don't perform as poorly on word puzzles as they would if they did assume it). These results not only suggest a way to overcome the relationship between price and the placebo effect but also suggest that the effect of discounts is largely an unconscious reaction to lower prices.

SO WE'VE SEEN how pricing drives the efficacy of placebo, painkillers, and energy drinks. But here's another thought. If placebos can make us feel better, should we simply sit back and enjoy them? Or are placebos patently bad—shams that should be discarded, whether they make us feel good or not? Before you answer this question, let me raise the ante. Suppose you found a placebo substance or a placebo procedure that not only made you feel better but actually made you physically better. Would you still use it? What if you were a physician? Would you prescribe medications that were only placebos? Let me tell you a story that helps explain what I'm suggesting.

In AD 800, Pope Leo III crowned Charlemagne emperor of the Romans, thus establishing a direct link between church and state. From then on the Holy Roman emperors, followed by the kings of Europe, were imbued with the glow of divinity. Out of this came what was called the "royal touch"—the practice of healing people. Throughout the Middle Ages, as one historian after another chronicled, the great kings would regularly pass through the crowds, dispensing the royal touch. Charles II, who ruled England from 1660 to 1685, for instance, was said to have touched some 100,000 people during his reign; and the records even include the names of several American colonists, who returned to the Old World from the New World just to cross paths with King Charles and be healed.

Did the royal touch really work? If no one had ever gotten better after receiving the royal touch, the practice would obviously have withered away. But throughout history, the royal touch was said to have cured thousands of people. Scrofula, a disfiguring and socially isolating disease often mistaken for leprosy,

was believed to be dispelled by the royal touch. Shakespeare wrote in *Macbeth*: "Strangely visited people, All sworn and ulcerous, pitiful to the eye . . . Put on with holy prayers and 'tis spoken, the healing benediction." The royal touch continued until the 1820s, by which time monarchs were no longer considered heaven-sent—and (we might imagine) "new, improved!" advances in Egyptian mummy ointments made the royal touch obsolete.

When people think about a placebo such as the royal touch, they usually dismiss it as "just psychology." But, there is nothing "just" about the power of a placebo, and in reality it represents the amazing way our mind controls our body. How the mind achieves these amazing outcomes is not always very clear.* Some of the effect, to be sure, has to do with reducing the level of stress, changing hormonal secretions, changing the immune system, etc. The more we understand the connection between brain and body, the more things that once seemed clear-cut become ambiguous. Nowhere is this as apparent as with the placebo.

In reality, physicians provide placebos all the time. For instance, a study done in 2003 found that more than one-third of patients who received antibiotics for a sore throat were later found to have viral infections, for which an antibiotic does absolutely no good (and possibly contributes to the rising number of drug-resistant bacterial infections that threaten us all[19]). But do you think doctors will stop handing us antibiotics when we have viral colds? Even when doctors know that a cold is viral rather than bacterial (and many colds are viral), they still know very well that the patient wants some sort of relief; most commonly, the patient expects to walk out with a prescription. Is it right for the physician to fill this psychic need?

The fact that physicians give placebos all the time does not mean that they want to do this, and I suspect that the practice tends to make them somewhat uncomfortable. They've been trained to see themselves as men and women of science, people who must look to the highest technologies of modern medicine for answers. They want to think of themselves as real healers, not practitioners of voodoo. So it can be extremely difficult for them to admit, even to themselves, that their job may include promoting health through the placebo effect. Now suppose that a doctor does allow, however grudgingly, that a treatment he knows to be a placebo helps some patients. Should he enthusiastically prescribe it? After all, the physician's enthusiasm for a treatment can play a real role in its efficacy.

Here's another question about our national commitment to health care. America already spends more of its GDP per person on health care than any other Western nation. How do we deal with the fact that expensive medicine (the 50-cent aspirin) may make people feel better than cheaper medicine (the penny aspirin). Do we indulge people's irrationality, thereby raising the costs of health care? Or do we insist that people get the cheapest generic drugs (and medical procedures) on the market, regardless of the increased efficacy of the more expensive drugs? How do we structure the cost and co-payment of treatments to get the most out of medications, and how can we provide discounted drugs to needy populations without giving them treatments that are less effective? These are central and complex issues for structuring our health care system. I don't have the answers to these questions, but they are important for all of us to understand.

Placebos pose dilemmas for marketers, too. Their profession requires them

to create perceived value. Hyping a product beyond what can be objectively proved is—depending on the degree of hype—stretching the truth or outright lying. But we've seen that the perception of value, in medicine, soft drinks, drugstore cosmetics, or cars, can become real value. If people actually get more satisfaction out of a product that has been hyped, has the marketer done anything worse than sell the sizzle along with the steak? As we start thinking more about placebos and the blurry boundary between beliefs and reality, these questions become more difficult to answer.

AS A SCIENTIST I value experiments that test our beliefs and the efficacy of different treatments. At the same time, it is also clear to me that experiments, particularly those involving medical placebos, raise many important ethical questions. Indeed, the experiment involving mammary ligation that I mentioned at the beginning of this chapter raised an ethical issue: there was an outcry against performing sham operations on patients.

The idea of sacrificing the well-being and perhaps even the life of some individuals in order to learn whether a particular procedure should be used on other people at some point in the future is indeed difficult to swallow. Visualizing a person getting a placebo treatment for cancer, for example, just so that years later other people will perhaps get better treatment seems a strange and difficult trade-off to make.

At the same time, the trade-offs we make by *not* carrying out enough placebo experiments are also hard to accept. And as we have seen, they can result in hundreds or thousands of people undergoing useless (but risky) operations. In the United States very few surgical procedures are tested scientifically. For that reason, we don't really know whether many operations really offer a cure, or whether, like many of their predecessors, they are effective merely because of their placebo effect. Thus, we may find ourselves frequently submitting to procedures and operations that if more carefully studied, would be put aside. Let me share with you my own story of a procedure that, in my case, was highly touted, but in reality was nothing more than a long, painful experience.

I had been in the hospital for two long months when my occupational therapist came to me with exciting news. There was a technological garment for people like me called the Jobst suit. It was skinlike, and it would add pressure to what little skin I had left, so that my skin would heal better. She told me that it was made at one factory in America, and one in Ireland, from where I would get such a suit, tailored exactly to my size. She told me I would need to wear trousers, a shirt, gloves, and a mask on my face. Since the suit fit exactly, they would press against my skin all the time, and when I moved, the Jobst suit would slightly massage my skin, causing the redness and the hypergrowth of the scars to decrease.

How excited I was! Shula, the physiotherapist, would tell me about how wonderful the Jobst was. She told me that it was made in different colors, and immediately I imagined myself covered from head to toe in a tight blue skin, like Spider-Man; but Shula cautioned me that the colors were only brown for white people and black for black people. She told me that people used to call the police when a person wearing the Jobst mask went into a bank, because they thought it

was a bank robber. Now when you get the mask from the factory, there is a sign you have to put on your chest, explaining the situation.

Rather than deterring me, this new information made the suit seem even better. It made me smile. I thought it would be nice to walk in the streets and actually be invisible. No one would be able to see any part of me except my mouth and my eyes. And no one would be able to see my scars.

As I imagined this silky cover, I felt I could endure any pain until my Jobst suit arrived. Weeks went by. And then it did arrive. Shula came to help me put it on for the first time. We started with the trousers: She opened them, in all their brownish glory, and started to put them on my legs. The feeling wasn't silky like something that would gently massage my scars. The material felt more like canvas that would tear my scars. I was still by no means disillusioned. I wanted to feel how it would be to be immersed completely in the suit.

After a few minutes it became apparent that I had gained some weight since the time when the measurements were taken (they used to feed me 7,000 calories and 30 eggs a day to help my body heal). The Jobst suit didn't fit very well. Still, I had waited a long time for it. Finally, with some stretching and a lot of patience on everyone's part, I was eventually completely dressed. The shirt with the long sleeves put great pressure on my chest, shoulders, and arms. The mask pressed hard all the time. The long trousers began at my toes and went all the way up to my belly button. And there were the gloves. The only visible parts of me were the ends of my toes, my eyes, my ears, and my mouth. Everything else was covered by the brown Jobst.

The pressure seemed to become stronger every minute. The heat inside was intense. My scars had a poor blood supply, and the heat made the blood rush to them, making them red and much more itchy. Even the sign warning people that I was not a bank robber was a failure. The sign was in English, not Hebrew, and so was quite worthless. My lovely dream had failed me. I struggled out of the suit. New measurements were taken and sent to Ireland so that I could get a better-fitting Jobst.

The next suit provided a more comfortable fit, but otherwise it was not much better. I suffered with this treatment for months—itching, aching, struggling to wear it, and tearing my delicate new skin while trying to put it on (and when this new thin skin tears, it takes a long while to heal). At the end I learned that this suit had no real benefits, at least not for me. The areas of my body that were better covered looked and felt no different from the areas that were not as well covered, and the suffering that went along with the suit turned out to be all that it provided me.

You see, while it would be morally questionable to make patients in the burn department take part in an experiment that was designed to test the efficacy of such suits (using different types of fabrics, different pressure levels, etc.), and even more difficult to ask someone to participate in a placebo experiment, it is also morally difficult to inflict painful treatments on many patients and for many years, without having a really good reason to do so.

If this type of synthetic suit had been tested relative to other methods, and relative to a placebo suit, that approach might have eliminated part of my daily misery. It might also have stimulated research on new approaches—ones that

would actually work. My wasted suffering, and the suffering of other patients like me, is the real cost of not doing such experiments.

Should we always test every procedure and carry out placebo experiments? The moral dilemmas involved in medical and placebo experiments are real. The potential benefits of such experiments should be weighed against their costs, and as a consequence we cannot, and should not, always do placebo tests. But my feeling is that we are not doing nearly as many of them as we should.

Reflections on Placebos: Don't Take Mine Away!

A few years ago, a woman seated next to me on a flight to California took a longish white cylinder from her bag, opened it, and dropped a quarter-size tablet into her airplane cup of water. I watched, mesmerized, as yellowish bubbles fizzed and foamed wildly in the cup. After the activity settled, the woman drank the whole concoction in two large sips.

I was very curious about this and, as she looked very pleased with the whole process, I asked her what she was drinking. She handed me the longish white tube. It was Airborne!

The description on the tube truly impressed me. These tablets, it said, had the power to boost the immune system and help fight the germs that surround passengers during flights. If I took it at the first sign of cold symptoms or before entering a crowded, potentially germ-infested environment, I could prevent the awful colds that I constantly fought. I could not imagine anything better. And, unlike any other medication I have seen, this one stated clearly that it had been invented by a second-grade teacher! Who better to design cold medications than someone surrounded day in and day out by germ-laden children? Since teachers are continually catching colds from their students, this seemed like a natural connection. Besides, I loved the bubbling, foaming action.

My seatmate could not ignore my enthusiasm, so she asked me if I wanted to try a tablet. I happily accepted one, dissolved it in my half cup of water, watched the fizzing and foaming, then drank the yellowish stuff in one gulp. I could see before me the image of my own beloved second-grade teacher—Rachel—and my fondness for her added to the experience. Almost immediately, I felt better. I completely avoided getting sick after that flight. Proof! Thus did Airborne become a staple in my travels.

Over the next few months I used Airborne as the tube suggested. Sometimes I drank it during a flight, but more often I consumed it after the flight. Each time I repeated the ritual, I immediately felt better about myself and about my chances of fighting off the insidious airborne diseases surrounding me. I was 99 percent sure that Airborne was a placebo, but the bubbles and the ritual were so wonderful that I just knew it would make me feel better. And it did! Besides, taking it made me more confident in my health and less stressed about getting sick—and, after all, stress and anxiety are known to lower immunity.

A few years later, just as I was beginning my book tour and had to fly constantly, I heard the tragic news that Victoria Knight-McDowell, the second-grade teacher from California who invented Airborne, had agreed to pay a sum of $23.3 million in a settlement for false advertising, in addition to refunding money to consumers who bought the product. The manufacturer had to change the statements and claims on the product itself. The former "miracle cold buster" had

been demoted to a simple dietary supplement made from 17 vitamins, minerals, and herbs. The old claim that Airborne "supports your immune system" remained intact on the packaging, but was accompanied by one of those pesky daggers (†) indicating fine print. You have to search for it, but eventually you find it hidden away in the back corner: "These statements have not been evaluated by the Food and Drug Administration. This product is not intended to diagnose, treat, cure, or prevent any diseases." How depressing.*

So there I was, faced with at least three flights a week for the next few months, and the magic of my Airborne was ripped away from me. I felt as if I had learned that a person I'd considered a good friend for many years had never really liked me and had been saying bad things about me behind my back. Maybe, I thought, if I went straight to the drugstore and got some of the old containers with the exaggerated and inflated claims, they might help restore the magical power of Airborne. But this seemed unlikely. I could not avoid the knowledge that my fizzy miracle was no such thing. It was just some dumb vitamin with neat Alka-Seltzer special effects. In the face of such disillusionment, I can no longer enjoy the wonderful placebo-immunity-enhancing effect of yesteryear.

Oh why, why did they do this to me? Why did they take my wonderful placebo away?

Chapter 12

The Cycle of Distrust

Why We Don't Believe What Marketers Tell Us

I'm not sure about you, but I get a lot of spam e-mail. People are constantly offering me the chance to make a lot of money or buy cheap software. They tell me I'm the one person they've always wanted to meet. They offer to enlarge or improve different parts of my body. I was even presented with the opportunity to get another Ph.D.—one that would not require another five years of hard labor. Instead, they would credit me for my life experience. So far, this is the only one that I've tried out. But after I contacted the organization offering this degree, they decided to drop me from their list of interested prospective students. Sadly, I never did get credit for my life experience.

Beyond spam, I get a lot of other proposals and requests. I was particularly curious about one that came from my local cable company. It promised one month of free digital cable. Since I'm interested in any offer that has the word *free* in it (see Chapter 3, "The Cost of Zero Cost"), I decided to take this one on. I called the company, and in a matter of days, a technician came to my house and installed my free digital cable. A month later, I received a bill for the free digital cable and found that it actually cost $60. When I called the customer service department, the nice fellow who took my call patiently explained that, unfortunately, I had problems with reading comprehension. He pointed out that the terms of the agreement were clearly explained in the seven-point font at the bottom of the company's ad. After I paid for the regular analog service, the box, the connection fee, and the remote, it said, I would "get for free" the *difference* between that amount ($60) and the standard amount ($79) for digital cable.

I generally consider myself a fairly trusting person, but with all the dubious offers and news about the bad behavior of businesses, I feel myself becoming less trusting and more suspicious. It seems that I'm always looking for the catch, and it turns out that I'm not alone in this paranoid mindset. Some years ago, two very perspicacious researchers, Marian Friestad and Peter Wright, suggested that people in general are starting to understand that the offers companies put before us are in their best interest and not ours. As a consequence, we've become more distrustful—not only of those who are trying to swindle us but of everyone.

Free Money

After talking about our own experience of increasing disillusionment, Ayelet Gneezy (a professor at the University of California at San Diego), Stephen Spiller (a doctoral student at Duke University), and I decided to try to measure the extent of the public's suspicion of companies. Our first question was how to measure the extent of distrust. We could, of course, ask each person in a group, "How

suspicious do you feel on a scale from 1 to 10, 1 being not at all suspicious and 10 being very suspicious?" The problem with this type of measurement is that it's difficult to tell exactly what 5.7 on such a scale really means. Would it suggest that people believed that the amazing offer from their cable company was real? Or would it mean that they were skeptical enough to read the fine print first? In addition, a lot of our research has shown that people often have wrong intuitions about their own behavior—they can say one thing but do another.

So, we decided to measure a behavior that would tell us people's degree of distrust, and our tool of choice was a free money experiment. One lovely spring day, we set up a booth at a big commercial center in Cambridge, Massachusetts, manned by some undergraduate students. Above our booth was a large sign that read "Free Money."

On the front of the booth was a smaller sign that indicated how much money we would give people for free. Sometimes the sign said $1, sometimes $5, and other times $10, $20, or even $50. The busy people who worked at this commercial center passed a sign saying "Free Money, $20" (or whichever denomination it happened to be at the time) on their way to lunch or as they were leaving for the day. They also saw a pile of bills in the given denomination on the table. How many people do you think stopped and took us up on our offer?

We didn't expect people to slow down and simply pick one of the bills off the table, taking us (or our sign) completely literally. We thought they would first ask if we were serious. On hearing us say, "Yes, we are, and you are welcome to take a bill," we assumed they would take a bill and go on their way. And lo, every so often someone would walk by the booth slowly, reading the sign and glancing at the students, who really did not look like crooks.

Here's how the scenario generally went:

MAN: (warily approaching the booth and eyeing the $50 bills) Is this a trick?

STUDENT: (smiling) Absolutely not.

MAN: Is there something I have to sign?

STUDENT: Nothing to sign.

MAN: There must be a catch.

STUDENT: No.

MAN: Is this for real?

STUDENT: Yes. Help yourself! One to a customer.

Reassured, the man would look around and help himself to a bill. He would hold it up for a second, as if waiting for something to happen. Then, he would turn around and begin to walk slowly away. His pace would eventually pick up, and he would disappear around a corner.

When we offered $1, only 1 percent of those who passed our booth actually stopped to check it out. When we offered $5, a few more did, and so on up to $50. But even when we offered $50, only 19 percent of passersby stopped and took a bill. We were surprised and slightly disappointed with this low level of trust; 19 percent is not a high level of success, particularly when free money is

(literally) on the table.

It is important to realize that in this setting, people did not necessarily have to believe that the money we offered was entirely free. They might have expected to have to do something in return—answer a short survey, for example. But even if they suspected as much, it might still be the case that the payment was a worthwhile return on an investment of answering a few questions.

Clearly, the vast majority believed that this was some kind of trick—so much so that it was not worthwhile to even ask. Occasionally, one of the students would approach someone who had clearly seen the offer on the booth but chosen to ignore it. When asked why they chose not to approach the booth, respondents said they believed that it was some kind of scheme. (A favorite claim made by economists is that there are no $100 bills lying on the sidewalk; if there were, the argument goes, someone would have already picked them up.) To us, this looked like evidence of deep mistrust.

The Tragedy of the Commons

Trust, like money, is a crucial lubricant for the economy. When people trust other people, a merchant, or a company, they are more likely to buy, lend, and extend credit. In the old days, business was conducted on a gentleman's handshake. But when the handshake results in a swindle, trust disappears and all subsequent transactions—whether between cheaters or the genuinely good-hearted—become more difficult.

A good analogy for social distrust can be found in the "tragedy of the commons." This phrase can be traced back to Oxford professor William Forster Lloyd, who described the phenomenon in his 1833 book on population. He noted that in medieval England, parishes had common land on which each member of the community could graze a limited number of cattle and sheep.* Keeping the number of animals low allowed the grass to grow back at a speed that kept its level more or less the same. This approach was rather successful when all the farmers stuck to the rule. Unfortunately, in their selfish desire to improve their own financial situations, some of the farmers increased the number of their animals to a level that the land could not sustain. This strategy was very good (at least in the short run) for the individual farmers who had more animals, but each additional cow or sheep resulted in less grass for all of the animals. As the grass dwindled, all the livestock on the commons became malnourished and underproductive—a result that hurt everyone, including the greedy farmers.

Today, psychologists, economists and environmentalists use the phrase "the tragedy of the commons" to describe the same basic principle: when we use a common resource at a rate that is slower than the rate at which it replenishes, all is well. However, if a few individuals get greedy and use more than their share, the system of consumption becomes unsustainable, and in the long term, everybody loses. In essence, the tragedy of the commons is about two competing human interests. On one hand, an individual should care about the sustainability of shared resources in the long term because everyone, including the individual, benefits from it. At the same time, in the short term, the individual benefits immediately from taking more than his or her fair share. (Social scientists refer to such betrayers of social contracts as "defectors.")

Of course, if we all cared about the common good or thought about the long-term consequences of our actions, we might not run into resource-sharing problems. But because human beings tend to focus on short-term benefits and our own immediate needs, such tragedies of the commons occur frequently. Take the wild salmon population, for example. While it is ideal for fishermen in general to limit their own catches so that the salmon population can be sustained, it's more profitable for an individual fisherman to overfish in a given year. But if too many fishermen even slightly surpass the sustainable limit, the overall fish population becomes depleted. (For this reason, salmon fishermen are now constrained by law to a limited number every year).

The current energy crisis is another example of the tragedy of the commons. Although there is a finite amount of fossil fuel in the world, some countries, industries, businesses, and individuals use far more than others while making little effort to minimize their impact on the common pool. Even public resources such as clean air, land, trees, and water fall victim to this problem. In the absence of cooperation among all the players in protecting such resources, a small number of misbehaving entities can have a devastating effect on everyone.

The Public Goods Game

The following thought experiment offers an interesting example of the phenomenon of the tragedy of the commons. Imagine that I offer you and three other people $10 each, which is yours to keep. But I also give you an opportunity to make more money. You can put as much of your $10 as you want into the "group pot." Once all the players have privately decided how much of their money to put in the group pot, all the money doubles and then is split evenly among the four participants, regardless of how much money each individual contributed. How much of your $10 would you put into the group pot? If all four of you put in $10, the group pot would double from $40 to $80, be divided four ways, and each of you would take away a nice $20.

So let's say you put in your $10, thinking that the other players will do the same. Once the pot is divided, however, you only get $15 back, not $20. What happened? It turns out that one of the other players—let's call him "Bernie"—decided to cheat. At the beginning of the game, Bernie realized that he would make the most money if he withheld his $10 while everyone else contributed to the central pot. So Bernie kept his $10 while the other three players placed their $10 in the central pot, making the total $30. This doubled for a total of $60, subsequently split four ways (remember, Bernie gets the proceeds of the group pot, whether or not he contributes), and each of the three contributors get $15. Bernie, meanwhile, makes out with $25 (his original $10, plus $15 from the split), more than any other player.

Now, let's say you get a chance to play the same game again with the same players (I give you all new $10 bills). How would you play this time? You don't want to be too trusting because you know that Bernie might defect again. So you only put in $4. It turns out that the other three players feel the same way and make the same decision, making the total

in the group's pot $12 (Bernie again does not put in any money). The pot doubles to $24, which is split evenly among four people. Each of the three contributing players gets $6 (in addition to the $6 they kept for themselves), while Bernie winds up with $16 in total.

Now, your trust has been eroded. You play a few more games, but you don't put in any of your money. Each time you end up with the $10 you started with. You don't lose anything, but since you don't trust others to behave in a cooperative way (and neither do the other players), you don't gain anything either. In contrast, if you and the others had acted cooperatively, each of you would have wound up with as much as $20 per game.

Viewed this way, the Public Goods Game illustrates how we, as a society, share the public good of trust. When we all cooperate, trust is high and the total value to society is maximal. But distrust is infectious. When we see people defect by lying in their advertisements, proposing scams, etc., we start acting similarly; trust deteriorates, and everybody loses, including the individuals who initially gained from their selfish acts.

If we start to think about trust as a public good (like clean air and water), we see that we can all benefit from higher levels of trust in terms of communicating with others, making financial transitions smoother, simplifying contracts, and many other business and social activities. Without constant suspicion, we can get more out of our exchanges with others while spending less time making sure that others will fulfill their promises to us. Yet as the tragedy of the commons exemplifies, in the short term it is beneficial for each individual to violate and take advantage of the established trust.

I suspect that most people and companies miss or ignore the fact that trust is an important public resource and that losing it can have long-term negative consequences for everyone involved. It doesn't take much to violate trust. Just a few bad players in the market can spoil it for everyone else.

Erosion of Trust over Time

In the picaresque film *Little Big Man*, the protagonist, a once-trusting but increasingly cynical young Jack Crabb (played by Dustin Hoffman), takes up with a one-eyed snake-oil salesman named Merriweather, who promises him that "if you stick with Merriweather, you'll wear silk." Crabb and Merriweather travel from town to town in the Old West, selling a miracle drug that Merriweather promises can make the blind see and cripples walk, but that is really just a brew concocted from rattlesnake heads. Of course, people get sick after swallowing it, and the townspeople take revenge by tarring and feathering the two tricksters. (In the real world of 1903, an analogous medicine called Rexall Americanitis Elixir was "especially recommended for nervous disorders, exhaustion, and all troubles arising from Americanitis."[20]) Of course, old-fashioned trust abusers like Merriweather and the makers of Rexall Americanitis Elixir are but mild offenders relative to those of the modern age.

Today, it's easy for one individual to start selling "wonder pills" that

promise to help you lose weight, keep or regrow your hair, enhance your sex life, and energize your workday. Unsuspecting people who buy such concoctions get all the benefits of placebos and, in the process, lose plenty of money. Meanwhile, the dishonest pill-purveyors gain substantially while further eroding the overall level of trust (at least for those who didn't benefit from the placebo effect). This erosion not only makes it harder for the next wonder pill salesperson to peddle goods (which by itself is a good thing), but also makes it more difficult for us to believe those who truly deserve to be trusted.

THERE'S ANOTHER ASPECT to this problem. Imagine that you are an honest person and you want to remain that way. How should you behave in a world where most people are untrustworthy and most individuals don't trust others anyway?

For a concrete example, suppose you've just joined an online dating site. If you suspect that most people on the site slightly exaggerate their vital and biographical statistics, you're right! When Günter Hitsch and Ali Hortaçsu (both professors at the University of Chicago) and I looked into the world of online dating, we discovered that men cared mostly about women's weight and women cared mostly about men's height and income. We also discovered, perhaps not surprisingly, that the online women reported their weight to be substantially below average, while the men claimed to be taller and richer than average. This suggests that both men and women know what the other half is looking for, and so they cheat just a little bit when describing their own attributes. A fellow who is 5'9" and earns $60,000 annually typically gives himself an extra inch and $30,000 raise, describing himself as being 5'10" and making $90,000. Meanwhile, his potential partner remembers her weight in college and, with a 5 percent discount, becomes 133 pounds.

But what happens if you're a 5'9" man and you decide to be honest since you believe honesty is a critical component of a good relationship? You're going to be penalized because women reading your 5'9" assume that your real height is 5'8" or 5'7". By refusing to cheat, you have substantially lowered your market value. So what do you do? You sigh, stuff your hands in your pockets, and realize that there's a lot stacked against honesty. Given the importance of finding a partner and having surrendered to the sad fact that everyone cheats a little, you too, I suspect, would give in and decide to fudge the facts just a little bit.

Of course, once we begin to cheat, even if only by a little, over time it can become a habit. Consider, for example, the process of writing a résumé. I see many of my students' résumés when they apply for jobs or graduate school and ask me for letters of recommendation. In their desire to stand out and grab the attention of the prospective employer, and because they think that everyone exaggerates a bit, they do too. Accordingly, anyone who's ever taken intro to statistics is suddenly "fluent in statistical analysis," a part-time job spent inputting data for an experiment turns into "assisting in data analysis," and a two-month internship in Paris becomes "fluent in French." In fact, the situation is so severe that when my research assistants show me their résumés, I sometimes feel as though the projects we have worked on together are actually theirs and that I've been assisting them.

How Deep Is Your Mistrust?

Following our "free money" experiment, Ayelet, Stephen, and I set up an experiment to see just how deep the level of mistrust of companies really goes. Specifically, we wanted to find out the degree to which people would doubt obviously truthful statements when these statements were associated with a brand.

We started out by asking people whether they thought that completely unambiguous statements such as "the sun is yellow" and "a camel is bigger than a dog" were true or false, and 100 percent of the participants agreed they were true. Then we asked another group of people to evaluate the same statements, with the added information that they were made by either Proctor & Gamble, the Democratic Party, or the Republican Party. Would giving these statements a corporate or political origin color our participants' impressions and would they be more likely to suspect the truthfulness of these statements?

The sad answer was yes. When we suggested that, say, the Democratic Party had issued the statement that "the sun is yellow," our participants were more likely to question it. ("Sure it's yellow, but it also has red spots on the surface and sometimes it looks white, so is it really *just* yellow?") If the Republican Party or P&G issued the statement that "a camel is bigger than a dog," the participants again were less certain and hedged their bets. ("What if the dog is a bull mastiff and the camel is a newborn . . . ?") By starting from a highly suspicious point of view, owing to the origin of the statement, the level of distrust was so high that it even influenced our participants' ability to identify obviously correct statements.*

IN OUR NEXT experiment, we wondered whether this kind of mistrust could change the actual experience someone was having with a product. To look into this question, we invited University of Chicago students to our lab to evaluate the quality of some stereo equipment, asking them to listen to an "Azur" model stereo made by Cambridge Audio.

Before being set loose on the woofers and tweeters, all the participants read a brochure describing and reviewing all the different features of the stereo equipment. Some of the participants read a brochure said to be from Cambridge Audio, and others read the same exact brochure, but this one indicated that it came from *Consumer Reports*. Then, all of the participants took half an hour to listen to a composition by
J. S. Bach and evaluate the stereo system. How powerful was the bass? How clear was the treble? Were the controls easy to use? Were there any sound distortions? And finally, how much would they pay for the system?

As it turned out, the participants liked the stereo much more if they were told that the information they read came from an unbiased source such as *Consumer Reports*. They also said they would pay, on average, about $407 for the system, far more than the $282 offered by those who read the Cambridge Audio brochure. Sadly, it appeared that mistrust in marketing information runs so deeply that it colors our entire perception—even in the face of firsthand, direct experience—causing us to enjoy the experience much less than we otherwise would. (And this happens with relatively trusted brands. Just imagine what would happen with distrusted ones.)

NOW, LET'S RETURN for a moment to my bad experience with the cable company's bait-and-switch. Ayelet, Stephen, and I decided to run a little study of our own

with the ad that promised me one month of free digital cable. We showed it to a few hundred people and asked them how much they thought this free offer would really cost. Being somewhat naïve and gullible myself, I was originally expecting the price to really be free (which, of course, it was not), but it turned out that very few people in our sample were as naïve as I had been; the vast majority expected the offer to cost them somewhere between $10 and $70. It seemed that most people have learned over time that there really is no such thing as a free lunch (or free cable service), and they adjust their expectations accordingly (although they are still annoyed when they find out the real price).

But this is not the end of the bad news. We also split our sample into two groups—one group that had prior experience with that particular cable provider and one that had not—and compared the two groups' cost estimates for the advertised free service. It turned out that there was a large gap between the two groups: those who'd never done business with the "free cable" company were just as gullible as I was, while those who'd done business with the cable company estimated the real cost to be much higher. What was the cause for this difference? You guessed it: those with past experience had been burned before and, as a consequence, revised their trust in anything that originated from this cable company.

Is There Hope?

I realize all this sounds very pessimistic, but there is a brighter side. After all, human beings are inherently social and trusting animals, and we tend to believe in one another even in the face of clear rational reasons not to do so. Despite the difficulties of overcoming broken trust, I think that it is possible to repair it, given the right amount of investment and direction.

Consider the archetypal example of Johnson & Johnson's handling of the 1982 Tylenol tampering incident. In September 1982, seven people in the Chicago area died after ingesting Extra Strength Tylenol capsules that a pharma-terrorist had adulterated with cyanide. From the beginning of the crisis, Johnson & Johnson's managers set the safety of the consumer as their top priority and did everything in their power to contain the tragedy, regardless of where the fault lay. Johnson & Johnson quickly and voluntarily halted Tylenol production, withdrew all Tylenol capsule products from the market, urged the return of all previously purchased Tylenol capsule products, and readily provided replacement tablets.

The company ultimately destroyed millions of bottles of Tylenol at a cost of more than $100 million. Tylenol's market share, which had accounted for more than a third of U.S. painkiller sales, dropped dramatically, and many experts predicted the demise of the popular brand. However, after a brief period, Johnson & Johnson reintroduced Tylenol in a new tamper-resistant triple safety-sealed container, accompanied by a blitz of advertising and positive media attention. Tylenol's market share recovered to 30 percent one year later, while Johnson & Johnson's share price recovered within two months.[21]

The fact that the Tylenol scare remains the overly cited paradigm of effective crisis management in business is almost depressing. After all, the example is an old one, and few companies since have behaved in such an

exemplary manner. Nevertheless, it did set a powerful example of how transparency and sacrifice can serve to restore public trust and help a firm set itself on the right path.

Another promising way for companies to create trust is by proactively addressing consumers' complaints. This approach is practiced by the cable giant (yes, cable giant) Comcast, which has begun responding to customer complaints even before they reach the customer service department. The director of digital care, Frank Eliason, discovered that by searching the internet for the word *Comcast* (or sometimes *Comcrap*), he could locate unhappy customers who were venting to themselves and to their friends. He then took the next step and started corresponding with the complainers about their problems before they became formal complaints. (Other companies—including JetBlue, General Motors, Kodak, Dell, and Domino's Pizza—also track customers' comments on Twitter and elsewhere.)

A more extreme version of this idea is for companies to make themselves transparent and vulnerable. By setting up Web sites where consumers can talk freely with the company and one another about products and services, warts and all, companies can expose themselves to large negative consequences if they ever misbehave. This type of transparency is a sort of commitment device that companies can use to force themselves to behave in a trustworthy way, even when they are tempted to do otherwise. And since in such a publicly exposed world it is harder to get away with flagrant mis-
behavior anyway, why not embrace more positive and trustworthy types of business processes?

Some special companies see trust as a public good (like clean air and water), and customers return the trust. One company in which I personally have a lot of faith is Timberland, the maker of outdoor clothing. I once attended a talk by Jeff Swartz, the CEO, in which he detailed many of the ways that Timberland is trying to reduce CO2 emissions, recycle, use sustainable materials, and treat its employees fairly. At the end of Jeff's talk, another CEO asked him, "What are the returns on these investments?" Jeff answered that he has been trying to find an economic return for these actions but that he had not yet found it in the data. He further added that it would be nice if being environmentally and socially responsible was also financially rewarding but that he didn't really feel it was necessary. He simply wanted to make sure that his company followed the moral principles he wanted his kids to live by. After hearing this, I went and bought my first pair of Timberland shoes.

A Moral Tale

Aesop's tale of "The Boy Who Cried Wolf" is a powerful fable of lost trust. You recall the story: A boy shepherd tending a town's livestock one day decides to have a little fun. "Wolf! Wolf!" he cries, and immediately the townsmen come armed, ready to defend their precious animals. They find that they've been duped and return to the town. A few days later, the boy again cries, "Wolf! Wolf!" and again the townsmen come, armed, ready to defend the livestock. Again, there is no wolf. Finally, when a wolf really does come, the boy's desperate cries for help fall on deaf ears. The townsmen no longer trust him and leave him to fend off the

wolf on his own. Consequently, the livestock fall prey to the wolf (in some versions of the story, the wolf eats the boy as well).

Let's think about this tale in terms of markets. There are two morals to the story. The first is that people are willing to forgive a bit of lying. Obviously, many corporations get away with lying in their advertisements and offers, at least temporarily. But when marketers persist in pulling bait-and-switch tactics, mistrust bites back, sinking its sharp teeth not only into the thigh of the perpetrator but also, more generally, into others as well. When market defectors spread false claims, more and more of us increase our level of distrust, and this distrust then gets diffused into everything we hear. We cast obvious truths into doubt, and we suspect everything. The cable company that betrayed my trust stung itself, for sure, but it also hurt its industry by causing consumers like me to mistrust telecommunications companies in general. And that mistrust, like a pebble dropped into a still pond, ripples throughout the telecommunications industry; creating tiny waves that end up affecting business and society as a whole.

But the second, more important moral—one that we are just beginning to understand—is that trust, once eroded, is very hard to restore. One only has to think about the banking crisis of 2008 that left the U.S. economy in tears. The multiple bailouts and new regulations that followed did little to heal the broken trust, and the behavior of Wall Street executives only ground salt into the wounds. I am unsure why trust as an important public resource was ignored, but it is clear to me that its loss will have long-term negative consequences for everyone involved, and that repairing the public trust will take a very long time. Thanks to shortsightedness and individual greed, the public commons (in this case, in the form of financial systems, government, and the economy as a whole) have suffered a great tragedy.

Nevertheless, by coming to understand trust as an important, tangible public resource to be protected and cared for, organizations could do a great deal to restore it. A few are beginning to take great care to create and maintain trust, and do what they can to prevent its possible deteriorations. In the end, I believe that companies that want to be successful will heed the example of Timberland and realize that honesty, transparency, conscientiousness, and fair dealing should be bedrock corporate principles. If we consumers reward their efforts by buying from them more frequently, we might over time be able to rebuild trust—at least in the select firms that really deserve it.

Chapter 13

The Context of Our Character, Part I

Why We Are Dishonest, and What We Can Do about It

In 2004, the total cost of all robberies in the United States was $525 million, and the average loss from a single robbery was about $1,300.[22] These amounts are not very high, when we consider how much police, judicial, and corrections muscle is put into the capture and confinement of robbers—let alone the amount of newspaper and television coverage these kinds of crimes elicit. I'm not suggesting that we go easy on career criminals, of course. They are thieves, and we must protect ourselves from their acts.

But consider this: every year, employees' theft and fraud at the workplace are estimated at about $600 billion. That figure is dramatically higher than the combined financial cost of robbery, burglary, larceny-theft, and automobile theft (totaling about $16 billion in 2004); it is much more than what all the career criminals in the United States could steal in their lifetimes; and it's also almost twice the market capitalization of General Electric. But there's much more. Each year, according to reports by the insurance industry, individuals add a bogus $24 billion to their claims of property losses. The IRS, meanwhile, estimates a loss of $350 billion per year, representing the gap between what the feds think people should pay in taxes and what they do pay. The retail industry has its own headache: it loses $16 billion a year to customers who buy clothes, wear them with the tags tucked in, and return these secondhand clothes for a full refund.

Add to this sundry everyday examples of dishonesty—the congressman accepting golfing junkets from his favorite lobbyist; the physician making kickback deals with the laboratories that he uses; the corporate executive who backdates his stock options to boost his final pay—and you have a huge amount of unsavory economic activity, dramatically larger than that of the standard household crooks.

When the Enron scandal erupted in 2001 (and it became apparent that Enron, as *Fortune* magazine's "America's Most Innovative Company" for six consecutive years, owed much of its success to innovations in accounting), Nina Mazar, On Amir (a professor at the University of California at San Diego), and I found ourselves discussing the subject of dishonesty over lunch. Why are some crimes, particularly white-collar crimes, judged less severely than others, we wondered—especially since their perpetrators can inflict more financial damage between their ten o'clock latte and lunch than a standard-issue burglar might in a lifetime?

After some discussion we decided that there might be two types of dishonesty. One is the type of dishonesty that evokes the image of a pair of crooks circling a gas station. As they cruise by, they consider how much money is in the

till, who might be around to stop them, and what punishment they may face if caught (including how much time off they might get for good behavior). On the basis of this cost-benefit calculation, they decide whether to rob the place or not.

Then there is the second type of dishonesty. This is the kind committed by people who generally consider themselves honest—the men and women (please stand) who have "borrowed" a pen from a conference site, taken an extra splash of soda from the soft drink dispenser, exaggerated the cost of their television on their property loss report, or falsely reported a meal with Aunt Enid as a business expense (well, she did inquire about how work was going).

We know that this second kind of dishonesty exists, but how prevalent is it? Furthermore, if we put a group of "honest" people into a scientifically controlled experiment and tempted them to cheat, would they? Would they compromise their integrity? Just how much would they steal? We decided to find out.

THE HARVARD BUSINESS SCHOOL holds a place of distinction in American life. Set on the banks of the River Charles in Boston, Massachusetts; housed in imposing colonial-style architecture; and dripping with endowment money, the school is famous for creating America's top business leaders. In the Fortune 500 companies, in fact, about 20 percent of the top three positions are held by graduates of the Harvard Business School.* What better place, then, to do a little experiment on the issue of honesty?*

The study would be fairly simple. We would ask a group of Harvard undergraduates and MBA students to take a test consisting of 50 multiple-choice questions. The questions would be similar to those on standardized tests (What is the longest river in the world? Who wrote *Moby-Dick*? What word describes the average of a series? Who, in Greek mythology, was the goddess of love?). The students would have 15 minutes to answer the questions. At the end of that time, they would be asked to transfer their answers from their worksheet to a scoring sheet (called a bubble sheet), and submit both the worksheet and the bubble sheet to a proctor at the front of the room. For every correct answer, the proctor would hand them 10 cents. Simple enough.

In another setup we asked a new group of students to take the same general test, but with one important change. The students in this section would take the test and transfer their work to their scoring bubble sheet, as the previous group did. But this time the bubble sheet would have the correct answers pre-marked. For each question, the bubble indicating the correct answer was colored gray. If the students indicated on their worksheet that the longest river in the world is the Mississippi, for instance, once they received the bubble sheet, they would clearly see from the markings that the right answer is the Nile. At that point, if the participants chose the wrong answer on their worksheet, they could decide to lie and mark the correct answer on the bubble sheet.

After they transferred their answers, they counted how many questions they had answered correctly, wrote that number at the top of their bubble sheet, and handed both the worksheet and the bubble sheet to the proctor at the front of the room. The proctor looked at the number of questions they claimed to have answered correctly (the summary number they wrote at the top of the bubble sheet) and paid them 10 cents per correct answer.

Would the students cheat—changing their wrong answers to the ones pre-marked on the bubble sheet? We weren't sure, but in any case, we decided to tempt the next group of students even more. In this condition the students would again take the test and transfer their answers to the pre-marked bubble sheet. But this time we would instruct them to shred their original worksheet, and hand only the bubble sheet to the proctor. In other words, they would destroy all evidence of any possible malfeasance. Would they take the bait? Again, we didn't know.

In the final condition, we would push the group's integrity to the limit. This time they would be instructed to destroy not only their original worksheet, but the final pre-marked bubble sheet as well. Moreover, they wouldn't even have to report their earnings to the experimenter: When they were finished shredding their work and answer sheets, they merely needed to walk up to the front of the room—where we had placed a jar full of coins—withdraw their earnings, and saunter out the door. If one was ever inclined to cheat, this was the opportunity to pull off the perfect crime.

Yes, we were tempting them. We were making it easy to cheat. Would the crème de la crème of America's youth take the bait? We'd have to see.

AS THE FIRST group settled into their seats, we explained the rules and handed out the tests. They worked for their 15 minutes, then copied their answers onto the bubble sheet, and turned in their worksheets and bubble sheets. These students were our control group. Since they hadn't been given any of the answers, they had no opportunity at all to cheat. On average, they got 32.6 of the 50 questions right.

What do you predict that the participants in our other experimental conditions did? Given that the participants in the control condition solved on average 32.6 questions correctly, how many questions do you think the participants in the other three conditions claimed to have solved correctly?

Condition 1 Control = 32.6
Condition 2 Self-check = ___
Condition 3 Self-check + shredding = ___
Condition 4 Self-check + shredding + money jar = ___

What about the second group? They too answered the questions. But this time, when they transferred their answers to the bubble sheet, they could see the correct answers. Would they sweep their integrity under the rug for an extra 10 cents per question? As it turned out, this group claimed to have solved on average 36.2 questions. Were they smarter than our control group? Doubtful. Instead, we had caught them in a bit of cheating (by about 3.6 questions).

What about the third group? This time we upped the ante. They not only got to see the correct answers but were also asked to shred their worksheets. Did they take the bait? Yes, they cheated. On average they claimed to have solved 35.9 questions correctly—more than the participants in the control condition, but about the same as the participants in the second group (the group that did not shred their worksheets).

Finally came the students who were told to shred not only their worksheets

but the bubble sheets as well—and then dip their hands into the money jar and withdraw whatever they deserved. Like angels they shredded their worksheets, stuck their hands into the money jar, and withdrew their coins. The problem was that these angels had dirty faces: their claims added up to an average 36.1 correct answers—quite a bit higher than the 32.6 of our control group, but basically the same as the other two groups who had the opportunity to cheat.

What did we learn from this experiment? The first conclusion, is that when given the opportunity, many honest people will cheat. In fact, rather than finding that a few bad apples weighted the averages, we discovered that the majority of people cheated, and that they cheated just a little bit.* And before you blame the refined air at the Harvard Business School for this level of dishonesty, I should add that we conducted similar experiments at MIT, Princeton, UCLA, and Yale with similar results.

The second, and more counterintuitive, result was even more impressive: once tempted to cheat, the participants didn't seem to be as influenced by the risk of being caught as one might think. When the students were given the opportunity to cheat without being able to shred their papers, they increased their correct answers from 32.6 to 36.2. But when they were offered the chance to shred their papers—hiding their little crime completely—they didn't push their dishonesty farther. They still cheated at about the same level. This means that even when we have no chance of getting caught, we still don't become wildly dishonest.

When the students could shred both their papers, dip their hand into the money jar, and walk away, every one of them could have claimed a perfect test score, or could have taken more money (the jar had about $100 in it). But none of them did. Why? Something held them back—something inside them. But what was it? What is honesty, anyhow?

TO THAT QUESTION, Adam Smith, the great economic thinker, had a pleasant reply: "Nature, when she formed man for society, endowed him with an original desire to please, and an original aversion to offend his bretheren. She taught him to feel pleasure in their favourable, and pain in their unfavourable regard," he noted.

To this Smith added, "The success of most people . . . almost always depends upon the favour and good opinion of their neighbours and equals; and without a tolerably regular conduct these can very seldom be obtained. The good old proverb, therefore, that honesty is always the best policy, holds, in such situations, almost always perfectly true."

That sounds like a plausible industrial-age explanation, as balanced and harmonious as a set of balance weights and perfectly meshed gears. However optimistic this perspective might seem, Smith's theory had a darker corollary: since people engage in a cost-benefit analysis with regard to honesty, they can also engage in a cost-benefit analysis to be dishonest. According to this perspective, individuals are honest only to the extent that suits them (including their desire to please others).

Are decisions about honesty and dishonesty based on the same cost-benefit analysis that we use to decide between cars, cheeses, and computers? I don't think

so. First of all, can you imagine a friend explaining to you the cost-benefit analysis that went into buying his new laptop? Of course. But can you imagine your friend sharing with you a cost-benefit analysis of her decision to steal a laptop? Of course not—not unless your friend is a professional thief. Rather, I agree with others (from Plato down) who say that honesty is something bigger—something that is considered a moral virtue in nearly every society.

Sigmund Freud explained it this way. He said that as we grow up in society, we internalize the social virtues. This internalization leads to the development of the superego. In general, the superego is pleased when we comply with society's ethics, and unhappy when we don't. This is why we stop our car at four AM when we see a red light, even if we know that no one is around; and it is why we get a warm feeling when we return a lost wallet to its owner, even if our identity is never revealed. Such acts stimulate the reward centers of our brain—the nucleus accumbens and the caudate nucleus—and make us content.

But if honesty is important to us (in a recent survey of nearly 36,000 high school students in the United States, 98 percent of them said it was important to be honest), and if honesty makes us feel good, why are we so frequently dishonest?

This is my take. We care about honesty and we want to be honest. The problem is that our internal honesty monitor is active only when we contemplate big transgressions, like grabbing an entire box of pens from the conference hall. For the little transgressions, like taking a single pen or two pens, we don't even consider how these actions would reflect on our honesty and so our superego stays asleep.

Without the superego's help, monitoring, and managing of our honesty, the only defense we have against this kind of transgression is a rational cost-benefit analysis. But who is going to consciously weigh the benefits of taking a towel from a hotel room versus the cost of being caught? Who is going to consider the costs and benefits of adding a few receipts to a tax statement? As we saw in the experiment at Harvard, the cost-benefit analysis, and the probability of getting caught in particular, does not seem to have much influence on dishonesty.

THIS IS THE way the world turns. It's almost impossible to open a newspaper without seeing a report of a dishonest or deceptive act. We watch as the credit card companies bleed their customers with outrageous interest rate hikes; as the airlines plunge into bankruptcy and then call on the federal government to get them—and their underfunded pension funds—out of trouble; and as schools defend the presence of soda machines on campus (and rake in millions from the soft drinks firms) all the while knowing that sugary drinks make kids hyperactive and fat. Taxes are a festival of eroding ethics, as the insightful and talented reporter David Cay Johnston of the *New York Times* describes in his book *Perfectly Legal: The Covert Campaign to Rig Our Tax System to Benefit the Super Rich—and Cheat Everybody Else*.

Against all of this, society, in the form of the government, has battled back, at least to some extent. The Sarbanes-Oxley Act of 2002 (which requires the chief executives of public companies to vouch for the firms' audits and accounts) was passed to make debacles like Enron's a thing of the past. Congress has also passed

restrictions on "earmarking" (specifically the pork-barrel spending that politicians insert into larger federal bills). The Securities and Exchange Commission even passed requirements for additional disclosure about executives' pay and perks—so that when we see a stretch limo carrying a Fortune 500 executive, we know pretty certainly how much the corporate chief inside is getting paid.

But can external measures like these really plug all the holes and prevent dishonesty? Some critics say they can't. Take the ethics reforms in Congress, for instance. The statutes ban lobbyists from serving free meals to congressmen and their aides at "widely attended" functions. So what have lobbyists done? Invited congressmen to luncheons with "limited" guest lists that circumvent the rule. Similarly, the new ethics laws ban lobbyists from flying congressmen in "fixed-wing" aircraft. So hey, how about a lift in a helicopter?

The most amusing new law I've heard about is called the "toothpick rule." It states that although lobbyists can no longer provide sit-down meals to congressmen, the lobbyists can still serve anything (presumably hors d'oeuvres) which the legislators can eat while standing up, plopping into their mouths using their fingers or a toothpick.

Did this change the plans of the seafood industry, which had organized a sit-down pasta and oyster dinner for Washington's legislators (called—you guessed it—"Let the World Be Your Oyster")? Not by much. The seafood lobbyists did drop the pasta dish (too messy to fork up with a toothpick), but still fed the congressmen well with freshly opened raw oysters (which the congressmen slurped down standing up).[23]

Sarbanes-Oxley has also been called ineffectual. Some critics say that it's rigid and inflexible, but the loudest outcry is from those who call it ambiguous, inconsistent, inefficient, and outrageously expensive (especially for smaller firms). "It hasn't cleaned up corruption," argued William A. Niskanen, chairman of the Cato Institute; "it has only forced companies to jump through hoops."

So much for enforcing honesty through external controls. They may work in some cases, but not in others. Could there be a better cure for dishonesty?

BEFORE I EVEN attempt to answer that question, let me describe an experiment we conducted that speaks volumes on the subject. A few years ago Nina, On, and I brought a group of participants together in a lab at UCLA and asked them to take a simple math test. The test consisted of 20 simple problems, each requiring participants to find two numbers that would add up to 10 (for a sample problem, see the table below). They had five minutes to solve as many of the problems as they could, after which they were entered into a lottery. If they won the lottery, they would receive ten dollars for each problem they solved correctly.

As in our experiment at the Harvard Business School, some of the participants handed in their papers directly to the experimenter. They were our control group. The other participants wrote down on another sheet the number of questions they solved correctly, and then disposed of the originals. These participants, obviously, were the ones with the opportunity to cheat. So, given this opportunity, did these participants cheat? As you may have surmised, they did (but, of course, just by a bit).

Look at your watch, note the time, and start searching for two numbers in the matrix below that will add up to exactly 10. How long did it take you?

1.69	1.82	2.91
4.67	4.81	3.05
5.82	5.06	4.28
6.36	5.19	4.57

Up to now I have not told you anything new. But the key to this experiment was what preceded it. When the participants first came to the lab, we asked some of them to write down the names of 10 books that they read in high school. The others were asked to write down as many of the Ten Commandments as they could recall.* After they finished this "memory" part of the experiment, we asked them to begin working on the matrix task.

This experimental setup meant that some of the participants were tempted to cheat after recalling 10 books that they read in high school, and some of them were tempted after recalling the Ten Commandments. Who do you think cheated more?

When cheating was *not* possible, our participants, on average, solved 3.1 problems correctly.*

When cheating was possible, the group that recalled 10 books read in high school achieved an average score of 4.1 questions solved (or 33 percent more than those who could not cheat).

But the big question is what happened to the other group—the students who first wrote down the Ten Commandments, then took the test, and then ripped up their worksheets. This, as sportscasters say, was the group to watch. Would they cheat—or would the Ten Commandments have an effect on their integrity? The result surprised even us: the students who had been asked to recall the Ten Commandments had not cheated at all. They averaged three correct answers—the same basic score as the group that could not cheat, and one less than those who were able to cheat but had recalled the names of the books.

As I walked home that evening I began to think about what had just happened. The group who listed 10 books cheated. Not a lot, certainly—only to that point where their internal reward mechanism (nucleus accumbens and superego) kicked in and rewarded them for stopping.

But what a miracle the Ten Commandments had wrought! We didn't even remind our participants what the Commandments were—we just asked each participant to recall them (and almost none of the participants could recall all 10). We hoped the exercise might evoke the idea of honesty among them. And this was clearly what it did. So, we wondered, what lessons about decreasing dishonesty can we learn from this experiment? It took us a few weeks to come to some conclusions.

FOR ONE, PERHAPS we could bring the Bible back into public life. If we only want to reduce dishonesty, it might not be a bad idea. Then again, some people might object, on the grounds that the Bible implies an endorsement of a particular religion, or merely that it mixes religion in with the commercial and secular world. But perhaps an oath of a different nature would work. What especially impressed me about the experiment with the Ten Commandments was that the students who could remember only one or two Commandments were as affected by them as the students who remembered nearly all ten. This indicated that it was not the Commandments themselves that encouraged honesty, but the mere contemplation of a moral benchmark of some kind.

If that were the case, then we could also use nonreligious benchmarks to raise the general level of honesty. For instance, what about the professional oaths that doctors, lawyers, and others swear to—or used to swear to? Could those professional oaths do the trick?

The word *profession* comes from the Latin *professus*, meaning "affirmed publicly." Professions started somewhere deep in the past in religion and then spread to medicine and law. Individuals who had mastered esoteric knowledge, it was said, not only had a monopoly on the practice of that knowledge, but had an obligation to use their power wisely and honestly. The oath—spoken and often written—was a reminder to practitioners to regulate their own behavior, and it also provided a set of rules that had to be followed in fulfilling the duties of their profession.

Those oaths lasted a long time. But then, in the 1960s, a strong movement arose to deregulate professions. Professions were elitist organizations, it was argued, and needed to be turned out into the light of day. For the legal profession that meant more briefs written in plain English prose, cameras in the courtrooms, and advertising. Similar measures against elitism were applied to medicine, banking, and other professions as well. Much of this could have been beneficial, but something was lost when professions were dismantled. Strict professionalism was replaced by flexibility, individual judgment, the laws of commerce, and the urge for wealth, and with it disappeared the bedrock of ethics and values on which the professions had been built.

A study by the state bar of California in the 1990s, for instance, found that a preponderance of attorneys in California were sick of the decline in honor in their work and "profoundly pessimistic" about the condition of the legal profession. Two-thirds said that lawyers today "compromise their professionalism as a result of economic pressure." Nearly 80 percent said that the bar "fails to adequately punish unethical attorneys." Half said they wouldn't become attorneys if they had it to do over again.[24]

A comparable study by the Maryland Judicial Task Force found similar distress among lawyers in that state. According to Maryland's lawyers, their profession had degenerated so badly that "they were often irritable, short-tempered, argumentative, and verbally abusive" or "detached, withdrawn, preoccupied, or distracted." When lawyers in Virginia were asked whether the increasing problems with professionalism were attributable to "a few bad apples" or to a widespread trend, they overwhelmingly said this was a widespread issue.[25]

Lawyers in Florida have been deemed the worst.[26] In 2003 the Florida bar reported that a "substantial minority" of lawyers were "money-grabbing, too clever, tricky, sneaky, and not trustworthy; who had little regard for the truth or fairness, willing to distort, manipulate, and conceal to win; arrogant, condescending, and abusive." They were also "pompous and obnoxious." What more can I say?

The medical profession has its critics as well. The critics mention doctors who do unnecessary surgeries and other procedures just to boost the bottom line: who order tests at laboratories that are giving them kickbacks, and who lean toward medical tests on equipment that they just happen to own. And what about the influence of the pharmaceutical industry? A friend of mine said he sat waiting for his doctor for an hour recently. During that time, he said, four (very attractive) representatives of drug companies went freely into and out of the office, bringing lunch, free samples, and other gifts with them.

You could look at almost any professional group and see signs of similar problems. How about the Association of Petroleum Geologists, for instance? The image I see is Indiana Jones types, with more interest in discussing Jurassic shale and deltaic deposits than in making a buck. But look deeper and you'll find trouble. "There is unethical behavior going on at a much larger scale than most of us would care to think," one member of the association wrote to her colleagues.[27]

What kind of dishonesty, for goodness' sake, could be rife in the ranks of petroleum geologists, you ask? Apparently things like using bootlegged seismic and digital data; stealing maps and materials; and exaggerating the promise of certain oil deposits, in cases where a land sale or investment is being made. "The malfeasance is most frequently of shades of gray, rather than black and white," one petroleum geologist remarked.

But let's remember that petroleum geologists are not alone. This decline in professionalism is everywhere. If you need more proof, consider the debate within the field of professional ethicists, who are called more often than ever before to testify at public hearings and trials, where they may be hired by one party or another to consider issues such as treatment rendered to a patient and the rights of the unborn. Are they tempted to bend to the occasion? Apparently so. "Moral Expertise: A Problem in the Professional Ethics of Professional Ethicists" is the title of one article in an ethics journal.[28] As I said, the signs of erosion are everywhere.

WHAT TO DO? Suppose that, rather than invoking the Ten Commandments, we got into the habit of signing our name to some secular statement—similar to a professional oath—that would remind us of our commitment to honesty. Would a simple oath make a difference, in the way that we saw the Ten Commandments make a difference? We needed to find out—hence our next experiment.

Once again we assembled our participants. In this study, the first group of participants took our matrix math test and handed in their answers to the experimenter in the front of the room (who counted how many questions they answered correctly and paid them accordingly). The second group also took the test, but the members of this group were told to fold their answer sheet, keep it in their possession, and tell the experimenter in the front of the room how many of

the problems they got right. The experimenter paid them accordingly, and they were on their way.

The novel aspect of this experiment had to do with the third group. Before these participants began, each was asked to sign the following statement on the answer sheet: "I understand that this study falls under the MIT honor system." After signing this statement, they continued with the task. When the time had elapsed they pocketed their answer sheets, walked to the front of the room, told the experimenter how many problems they had correctly solved, and were paid accordingly.

What were the results? In the control condition, in which cheating was not possible, participants solved on average three problems (out of 20). In the second condition, in which the participants could pocket their answers, they claimed to have solved on average 5.5 problems. What was remarkable was the third situation—in which the participants pocketed their answer sheets, but had also signed the honor code statement. In this case they claimed to have solved, on average, three problems—exactly the same number as the control group. This outcome was similar to the results we achieved with the Ten Commandments—when a moral reminder eliminated cheating altogether. The effect of signing a statement about an honor code is particularly amazing when we take into account that MIT doesn't even have an honor code.

So we learned that people cheat when they have a chance to do so, but they don't cheat as much as they could. Moreover, once they begin thinking about honesty—whether by recalling the Ten Commandments or by signing a simple statement—they stop cheating completely. In other words, when we are removed from any benchmarks of ethical thought, we tend to stray into dishonesty. But if we are reminded of morality at the moment we are tempted, then we are much more likely to be honest.

At present, several state bars and professional organizations are scrambling to shore up their professional ethics. Some are increasing courses in college and graduate schools, and others are requiring brush-up ethics classes. In the legal profession, Judge Dennis M. Sweeney of the Howard County (Maryland) circuit published his own book, *Guidelines for Lawyer Courtroom Conduct*, in which he noted, "Most rules, like these, are simply what our mothers would say a polite and well raised man or woman should do. Since, given their other important responsibilities, our mothers (and yours) cannot be in every courtroom in the State, I offer these rules."

Will such general measures work? Let's remember that lawyers do take an oath when they are admitted to the bar, as doctors take an oath when they enter their profession. But occasional swearing of oaths and occasional statements of adherence to rules are not enough. From our experiments, it is clear that oaths and rules must be recalled at, or just before, the moment of temptation. Also, what is more, time is working against us as we try to curb this problem. I said in Chapter 4 that when social norms collide with market norms, the social norms go away and the market norms stay. Even if the analogy is not exact, honesty offers a related lesson: once professional ethics (the social norms) have declined, getting them back won't be easy.

THIS DOESN'T MEAN that we shouldn't try. Why is honesty so important? For one thing, let's not forget that the United States holds a position of economic power in the world today partly because it is (or at least is perceived to be) one of the world's most honest nations, in terms of its standards of corporate governance.

In 2002, the United States ranked twentieth in the world in terms of integrity, according to one survey (Denmark, Finland, and New Zealand were first; Haiti, Iraq, Myanmar, and Somalia were last, at number 163). On this basis, I would suspect that people doing business with the United States generally feel they can get a fair deal. But the fact of the matter is that the United States ranked fourteenth in 2000, before the wave of corporate scandals made the business pages in American newspapers look like a police blotter.[29] We are going down the slippery slope, in other words, not up it, and this can have tremendous long-term costs.

Adam Smith reminded us that honesty really is the best policy, especially in business. To get a glimpse at the other side of that realization—at the downside, in a society without trust—you can take a look at several countries. In China, the word of one person in one region rarely carries to another region. Latin America is full of family-run cartels that hand out loans to relatives (and then fail to cut off credit when the debtor begins to default). Iran is another example of a nation stricken by distrust. An Iranian student at MIT told me that business there lacks a platform of trust. Because of this, no one pays in advance, no one offers credit, and no one is willing to take risks. People must hire within their families, where some level of trust still exists. Would you like to live in such a world? Be careful, because without honesty we might get there faster than you'd imagine.

What can we do to keep our country honest? We can read the Bible, the Koran, or whatever reflects our values, perhaps. We can revive professional standards. We can sign our names to promises that we will act with integrity. Another path is to first recognize that when we get into situations where our personal financial benefit stands in opposition to our moral standards, we are able to "bend" reality, see the world in terms compatible with our selfish interest, and become dishonest. What is the answer, then? If we recognize this weakness, we can try to avoid such situations from the outset. We can prohibit physicians from ordering tests that would benefit them financially; we can prohibit accountants and auditors from functioning as consultants to the same companies; we can bar members of Congress from setting their own salaries, and so on.

But this is not the end of the issue of dishonesty. In the next chapter, I will offer some other suggestions about dishonesty, and some other insights into how we struggle with it.

Reflections on Dishonesty and Toilet Paper

About a year after *Predictably Irrational* was first published, I received an interesting e-mail from a woman who used elements from our honor code experiment to design her own test, which effectively solved an important problem involving stolen toilet paper.

> *Dear Professor Ariely,*
>
> *I found your experiments on cheating particularly interesting (e.g., the nonexistent "MIT honor code" and "The 10 Commandments") and actually modeled an experiment of my own on*

yours.

I live in a house near the UC Berkeley campus. I share the house with many housemates; none of us knew each other before moving in. Moreover, a bunch of new students moved into the house for the summer months last year. This living arrangement led to a number of problems—namely, the stealing of toilet paper.

Every Sunday, a housekeeper restocks each toilet with three fresh rolls of toilet paper. Last summer, however, I noticed that by Monday evening, all the toilet paper would be gone. This is not unlike a "tragedy of the commons" situation, and it has become clear that certain housemates were hoarding the toilet paper for their private use. I tried to think of ways to stop the hoarding. I did not want to confront anyone, because my goal was to keep the TP from disappearing, not to alienate people.*

With your experiment in mind, I put a note in the upstairs bathroom asking housemates not to take toilet paper outside the restroom for personal use.

A couple of hours later, one fresh roll of toilet paper magically reappeared in the bathroom where I had placed the note. This had never happened before. The experiment worked! I checked the downstairs restroom, where I had not left a note—no rolls to be found. Two days later, another fresh roll of toilet paper reappeared in the upstairs bathroom.

I was quite pleased that my note helped put an end to the hoarding/stealing.

Thank you for the inspiration! Behavioral economics is certainly applicable to daily life!

Regards,
Rhonda

I must confess that when I thought about the implications of the honor-reminder experiments for day-to-day life, issues around toilet paper didn't come to mind. But I am happy that Rhonda made the connection and applied it to her own situation. I am also quite pleased that she placed the note in one bathroom but not the other—nice experimental control!

Appendix: Chapter 13

The Ten Commandments*

Catholic - I, the Lord, am your God. You shall not have other gods besides me.
Jewish - I am the Lord your God who has taken you out of the land of Egypt.
Protestant - You shall have no other gods but me.

Catholic - You shall not take the name of the Lord, your God, in vain.
Jewish - You shall have no other gods but me.
Protestant - You shall not make unto you any graven images.

Catholic - Remember to keep holy the Lord's Day.
Jewish - You shall not take the name of the Lord your God in vain.
Protestant - You shall not take the name of the Lord your God in vain.

Catholic - Honor your father and your mother.
Jewish - You shall remember the Sabbath and keep it Holy.
Protestant - You shall remember the Sabbath and keep it Holy.

Catholic - You shall not kill.
Jewish - Honor your mother and father.
Protestant - Honor your mother and father.

Catholic - You shall not commit adultery.
Jewish - You shall not murder.
Protestant - You shall not murder.

Catholic - You shall not steal.
Jewish - You shall not commit adultery.
Protestant - You shall not commit adultery.

Catholic - You shall not bear false witness.
Jewish - You shall not steal.
Protestant - You shall not steal.

Catholic - You shall not covet your neighbor’s wife.
Jewish - You shall not bear false witness.
Protestant - You shall not bear false witness.

Catholic - You shall not covet your neighbor’s goods.
Jewish - You shall not covet anything that belongs to your neighbor.
Protestant - You shall not covet anything that belongs to your neighbor.

Chapter 14

The Context of Our Character, Part II

Why Dealing with Cash Makes Us More Honest

Many of the dormitories at MIT have common areas, where sit a variety of refrigerators that can be used by the students in the nearby rooms. One morning at about eleven, when most of the students were in class, I slipped into the dorms and, floor by floor, went hunting for all the shared refrigerators that I could find.

When I detected a communal fridge, I inched toward it. Glancing cautiously around, I opened the door, slipped in a six-pack of Coke, and walked briskly away. At a safe distance, I paused and jotted down the time and the location of the fridge where I had left my Cokes.

Over the next few days I returned to check on my Coke cans. I kept a diary detailing how many of them remained in the fridge. As you might expect, the half-life of Coke in a college dorm isn't very long. All of them had vanished within 72 hours. But I didn't always leave Cokes behind. In some of the fridges, I left a plate containing six one-dollar bills. Would the money disappear faster than the Cokes?

Before I answer that question, let me ask you one. Suppose your spouse calls you at work. Your daughter needs a red pencil for school the next day. "Could you bring one home?" How comfortable would you be taking a red pencil from work for your daughter? Very uncomfortable? Somewhat uncomfortable? Completely comfortable?

Let me ask you another question. Suppose there are no red pencils at work, but you can buy one downstairs for a dime. And the petty cash box in your office has been left open, and no one is around. Would you take 10 cents from the petty cash box to buy the red pencil? Suppose you didn't have any change and needed the 10 cents. Would you feel comfortable taking it? Would that be OK?

I don't know about you, but while I'd find taking a red pencil from work relatively easy, I'd have a very hard time taking the cash. (Luckily for me, I haven't had to face this issue, since my daughter is not in school yet.)

As it turns out, the students at MIT also felt differently about taking cash. As I mentioned, the cans of Coke quickly disappeared; within 72 hours every one of them was gone. But what a different story with the money! The plates of dollar bills remained untouched for 72 hours, until I removed them from the refrigerators.

So what's going on here?

When we look at the world around us, much of the dishonesty we see involves cheating that is one step removed from cash. Companies cheat with their accounting practices; executives cheat by using backdated stock options; lobbyists cheat by underwriting parties for politicians; drug companies cheat by sending doctors and their wives off on posh vacations. To be sure, these people don't

cheat with cold cash (except occasionally). And that's my point: cheating is a lot easier when it's a step removed from money.

Do you think that the architects of Enron's collapse—Kenneth Lay, Jeffrey Skilling, and Andrew Fastow—would have stolen money from the purses of old women? Certainly, they took millions of dollars in pension monies from a lot of old women. But do you think they would have hit a woman with a blackjack and pulled the cash from her fingers? You may disagree, but my inclination is to say no.

So what permits us to cheat when cheating involves nonmonetary objects, and what restrains us when we are dealing with money? How does that irrational impulse work?

BECAUSE WE ARE so adept at rationalizing our petty dishonesty, it's often hard to get a clear picture of how nonmonetary objects influence our cheating. In taking a pencil, for example, we might reason that office supplies are part of our overall compensation, or that lifting a pencil or two is what everyone does. We might say that taking a can of Coke from a communal refrigerator from time to time is all right, because, after all, we've all had cans of Coke taken from us. Maybe Lay, Skilling, and Fastow thought that cooking the books at Enron was OK, since it was a temporary measure that could be corrected when business improved. Who knows?

To get at the true nature of dishonesty, then, we needed to develop a clever experiment, one in which the object in question would allow few excuses. Nina, On, and I thought about it. Suppose we used symbolic currency, such as tokens. They were not cash, but neither were they objects with a history, like a Coke or a pencil. Would it give us insight into the cheating process? We weren't sure, but it seemed reasonable; and so, a few years ago, we gave it a try.

This is what happened. As the students at one of the MIT cafeterias finished their lunches, we interrupted them to ask whether they would like to participate in a five-minute experiment. All they had to do, we explained, was solve 20 simple math problems (finding two numbers that added up to 10). And for this they would get 50 cents per correct answer.

The experiment began similarly in each case, but ended in one of three different ways. When the participants in the first group finished their tests, they took their worksheets up to the experimenter, who tallied their correct answers and paid them 50 cents for each. The participants in the second group were told to tear up their worksheets, stuff the scraps into their pockets or backpacks, and simply tell the experimenter their score in exchange for payment. So far this experiment was similar to the tests of honesty described in the previous chapter.

But the participants in the last group had something significantly different in their instructions. We told them, as we had told the previous group, to tear up the worksheets and simply tell the experimenter how many questions they had answered correctly. But this time, the experimenter wouldn't be giving them cash. Rather, she would give them a token for each question they claimed to have solved. The students would then walk 12 feet across the room to another experimenter, who would exchange each token for 50 cents.

Do you see what we were doing? Would the insertion of a token into the transaction—a piece of valueless, nonmonetary currency—affect the students' honesty? Would the token make the students less honest in tallying their answers than the students who received cash immediately? If so, by how much?

Even we were surprised by the results: The participants in the first group (who had no way to cheat) solved an average of 3.5 questions correctly (they were our control group).

The participants in the second group, who tore up their worksheets, claimed to have correctly solved an average of 6.2 questions. Since we can assume that these students did not become smarter merely by tearing up their worksheets, we can attribute the 2.7 additional questions they claimed to have solved to cheating.

But in terms of brazen dishonesty, the participants in the third group took the cake. They were no smarter than the previous two groups, but they claimed to have solved an average of 9.4 problems—5.9 more than the control group and 3.2 more than the group that merely ripped up the worksheets.

This means that when given a chance to cheat under ordinary circumstances, the students cheated, on average, by 2.7 questions. But when they were given the same chance to cheat with nonmonetary currency, their cheating increased to 5.9—more than doubling in magnitude. What a difference there is in cheating for money versus cheating for something that is a step away from cash!

If that surprises you, consider this. Of the 2,000 participants in our studies of honesty (described in the previous chapter), only four ever claimed to have solved all the problems. In other words, the rate of "total cheating" was four in 2,000.*

But in the experiment in which we inserted nonmonetary currency (the token), 24 of the study's 450 participants cheated "all the way." How many of these 24 extreme cheaters were in the condition with money versus the condition with tokens? They were all in the token condition (24 of 150 students cheated "all the way" in this condition; this is equivalent to about 320 per 2,000 participants). This means that not only did the tokens "release" people from some of their moral constraints, but for quite a few of them, the extent of the release was so complete that they cheated as much as was possible.

This level of cheating is clearly bad, but it could have been worse. Let's not forget that the tokens in our experiments were transformed into cash within a matter of seconds. What would the rate of dishonesty have been if the transfer from a nonmonetary token to cash took a few days, weeks, or months (as, for instance, in a stock option)? Would even more people cheat, and to a larger extent?

WE HAVE LEARNED that given a chance, people cheat. But what's really odd is that most of us don't see this coming. When we asked students in another experiment to predict if people would cheat more for tokens than for cash, the students said no, the amount of cheating would be the same. After all, they explained, the tokens represented real money—and the tokens were exchanged within seconds for actual cash. And so, they predicted, our participants would treat the tokens as real cash.

But how wrong they were! They didn't see how fast we can rationalize our dishonesty when it is one step away from cash. Of course, their blindness is ours as well. Perhaps it's why so much cheating goes on. Perhaps it's why Jeff Skilling, Bernie Ebbers, and the entire roster of executives who have been prosecuted in recent years let themselves, and their companies, slide down the slope.

All of us are vulnerable to this weakness, of course. Think about all the insurance fraud that goes on. It is estimated that when consumers report losses on their homes and cars, they creatively stretch their claims by about 10 percent. (Of course, as soon as you report an exaggerated loss, the insurance company raises its rates, so the situation becomes tit for tat). Again it is not the case that there are many claims that are completely flagrant, but instead many people who have lost, say, a 27-inch television set report the loss of a 32-inch set; those who have lost a 32-inch set report the loss of a 36-inch set, and so on. These same people would be unlikely to steal money directly from the insurance companies (as tempting as that might sometimes be), but reporting what they no longer have—and increasing its size and value by just a little bit—makes the moral burden easier to bear.

There are other interesting practices. Have you ever heard the term "wardrobing"? Wardrobing is buying an item of clothing, wearing it for a while, and then returning it in such a state that the store has to accept it but can no longer resell it. By engaging in wardrobing, consumers are not directly stealing money from the company; instead, it is a dance of buying and returning, with many unclear transactions involved. But there is at least one clear consequence—the clothing industry estimates that its annual losses from wardrobing are about $16 billion (about the same amount as the estimated annual loss from home burglaries and automobile theft combined).

And how about expense reports? When people are on business trips, they are expected to know what the rules are, but expense reports too are one step, and sometimes even a few steps, removed from cash. In one study, Nina and I found that not all expenses are alike in terms of people's ability to justify them as business expenses. For example, buying a mug for five dollars for an attractive stranger was clearly out of bounds, but buying the same stranger an eight-dollar drink in a bar was very easy to justify. The difference was not the cost of the item, or the fear of getting caught, but people's ability to justify the item to themselves as a legitimate use of their expense account.

A few more investigations into expense accounts turned up similar rationalizations. In one study, we found that when people give receipts to their administrative assistants to submit, they are then one additional step removed from the dishonest act, and hence more likely to slip in questionable receipts. In another study, we found that businesspeople who live in New York are more likely to consider a gift for their kid as a business expense if they purchased it at the San Francisco airport (or someplace else far from home) than if they had purchased it at the New York airport, or on their way home from the airport. None of this makes logical sense, but when the medium of exchange is nonmonetary, our ability to rationalize increases by leaps and bounds.

I HAD MY own experience with dishonesty a few years ago. Someone broke into

my Skype account (very cool online telephone software) and charged my PayPal account (an online payment system) a few hundred dollars for the service.

I don't think the person who did this was a hardened criminal. From a criminal's perspective, breaking into my account would most likely be a waste of time and talent because if this person was sufficiently smart to hack into Skype, he could probably have hacked into Amazon, Dell, or maybe even a credit card account, and gotten much more value for his time. Rather, I imagine that this person was a smart kid who had managed to hack into my account and who took advantage of this "free" communication by calling anyone who would talk to him until I managed to regain control of my account. He may have even seen this as a techie challenge—or maybe he is a student to whom I once gave a bad grade and who decided to tweak my nose for it.

Would this kid have taken cash from my wallet, even if he knew for sure that no one would ever catch him? Maybe, but I imagine that the answer is no. Instead, I suspect that there were some aspects of Skype and of how my account was set up that "helped" this person engage in this activity and not feel morally reprehensible: First, he stole calling time, not money. Next, he did not gain anything tangible from the transaction. Third, he stole from Skype rather than directly from me. Fourth, he might have imagined that at the end of the day Skype, not I, would cover the cost. Fifth, the cost of the calls was charged automatically to me via PayPal. So here we had another step in the process—and another level of fuzziness in terms of who would eventually pay for the calls. (Just in case you are wondering, I have since canceled this direct link to PayPal.)

Was this person stealing from me? Sure, but there were so many things that made the theft fuzzy that I really don't think he thought of himself as a dishonest guy. No cash was taken, right? And was anyone really hurt? This kind of thinking is worrisome. If my problem with Skype was indeed due to the nonmonetary nature of the transactions on Skype, this would mean that there is much more at risk here, including a wide range of online services, and perhaps even credit and debit cards. All these electronic transactions, with no physical exchange of money from hand to hand, might make it easier for people to be dishonest—without ever questioning or fully acknowledging the immorality of their actions.

THERE'S ANOTHER, SINISTER impression that I took out of our studies. In our experiments, the participants were smart, caring, honorable individuals, who for the most part had a clear limit to the amount of cheating they would undertake, even with nonmonetary currency like the tokens. For almost all of them, there was a point at which their conscience called for them to stop, and they did. Accordingly, the dishonesty that we saw in our experiments was probably the lower boundary of human dishonesty: the level of dishonesty practiced by individuals who want to be ethical and who want to see themselves as ethical—the so-called good people.

The scary thought is that if we did the experiments with nonmonetary currencies that were not as immediately convertible into money as tokens, or with individuals who cared less about their honesty, or with behavior that was not so publicly observable, we would most likely have found even higher levels of dishonesty. In other words, the level of deception we observed here is probably

an underestimation of the level of deception we would find across a variety of circumstances and individuals.

Now suppose that you have a company or a division of a company led by a Gordon Gekko character who declares that "greed is good." And suppose he used nonmonetary means of encouraging dishonesty. Can you see how such a swashbuckler could change the mind-set of people who in principle want to be honest and want to see themselves as honest, but also want to hold on to their jobs and get ahead in the world? It is under just such circumstances that nonmonetary currencies can lead us astray. They let us bypass our conscience and freely explore the benefits of dishonesty.

This view of human nature is worrisome. We can hope to surround ourselves with good, moral people, but we have to be realistic. Even good people are not immune to being partially blinded by their own minds. This blindness allows them to take actions that bypass their own moral standards on the road to financial rewards. In essence, motivation can play tricks on us whether or not we are good, moral people.

As the author and journalist Upton Sinclair once noted, "It is difficult to get a man to understand something when his salary depends upon his not understanding it." We can now add the following thought: it is even more difficult to get a man to understand something when he is dealing with nonmonetary currencies.

THE PROBLEMS OF dishonesty, by the way, don't apply just to individuals. In recent years we have seen business in general succumb to a lower standard of honesty. I'm not talking about big acts of dishonesty, like those perpetrated by Enron and Worldcom. I mean the small acts of dishonesty that are similar to swiping Cokes out of the refrigerator. There are companies out there, in other words, that aren't stealing cash off our plates, so to speak, but are stealing things one step removed from cash.

There are plenty of examples. Recently, one of my friends, who had carefully saved up his frequent-flyer miles for a vacation, went to the airline who issued all these miles. He was told that all the dates he wanted were blacked out. In other words, although he had saved up 25,000 frequent-flyer miles, he couldn't use them (and he tried many dates). But, the representative said, if he wanted to use 50,000 miles, there might be some seats. She checked. Sure, there were seats everywhere.

To be sure, there was probably some small print in the frequently-flyer brochure explaining that this was OK. But to my friend, the 25,000 miles he had earned represented a lot of money. Let's say it was $450. Would this airline have mugged him for that amount of cash? Would the airline have swiped it from his bank account? No. But because it was one step removed, the airline stole it from him in the form of requiring 25,000 additional miles.

For another example, look at what banks are doing with credit card rates. Consider what is called two-cycle billing. There are several variations of this trick, but the basic idea is that the moment you don't pay your bill in full, the credit issuer will not only charge a high interest rate on new purchases, but will actually

reach into the past and charge interest on past purchases as well. When the Senate banking committee looked into this recently, it heard plenty of testimony that certainly made the banks look dishonest. For instance, a man in Ohio who charged $3,200 to his card soon found his debt to be $10,700 because of penalties, fees, and interest.

These were not boiler-room operators charging high interest rates and fees, but some of the biggest and presumably most reputable banks in America—those whose advertising campaigns would make you believe that you and the bank were "family." Would a family member steal your wallet? No. But these banks, with a transaction somewhat removed from cash, apparently would.

Once you view dishonesty through this lens, it is clear that you can't open a newspaper in the morning without seeing new examples to add.

AND SO WE return to our original observation: isn't cash strange? When we deal with money, we are primed to think about our actions as if we had just signed an honor code. If you look at a dollar bill, in fact, it seems to have been designed to conjure up a contract: THE UNITED STATES OF AMERICA, it says in prominent type, with a shadow beneath that makes it seem three-dimensional. And there is George Washington himself (and we all know that he could never tell a lie). And then, on the back, it gets even more serious: IN GOD WE TRUST, it says. And then we've got that weird pyramid, and on top, that unblinking eye! And it's looking right at us! In addition to all this symbolism, the sanctity of money could also be aided by the fact that money is a clear unit of exchange. It's hard to say that a dime is not a dime, or a buck isn't a buck.

But look at the latitude we have with nonmonetary exchanges. There's always a convenient rationale. We can take a pencil from work, a Coke from the fridge—we can even backdate our stock options—and find a story to explain it all. We can be dishonest without thinking of ourselves as dishonest. We can steal while our conscience is apparently fast asleep.

How can we fix this? We could label each item in the supply cabinet with a price, for instance, or use wording that explains stocks and stock options clearly in terms of their monetary value. But in the larger context, we need to wake up to the connection between nonmonetary currency and our tendency to cheat. We need to recognize that once cash is a step away, we will cheat by a factor bigger than we could ever imagine. We need to wake up to this—individually and as a nation, and do it soon.

Why? For one thing, the days of cash are coming to a close. Cash is a drag on the profits of banks—they want to get rid of it. On the other hand, electronic instruments are very profitable. Profits from credit cards in the United States rose from $9 billion in 1996 to a record $27 billion in 2004. By 2010, banking analysts say, there will be $50 billion in new electronic transactions, nearly twice the number processed under the Visa and MasterCard brands in 2004.[30] The question, therefore, is how we can control our tendency to cheat when we are brought to our senses only by the sight of cash—and what we can do now that cash is going away.

Willie Sutton allegedly said that he robbed banks because that's where the

money was. By that logic he might be writing the fine print for a credit card company today or penciling in blackout dates for an airline. It might not be where the cash is, but it's certainly where you will find the money.

Chapter 15

Beer and Free Lunches

What Is Behavioral Economics, and Where Are the Free Lunches?

The Carolina Brewery is a hip bar on Franklin Street, the main street outside the University of North Carolina at Chapel Hill. A beautiful street with brick buildings and old trees, it has many restaurants, bars, and coffee shops—more than one would expect to find in a small town.

As you open the doors to the Carolina Brewery, you see an old building with high ceilings and exposed beams, and a few large stainless steel beer containers that promise a good time. There are semiprivate tables scattered around. This is a favorite place for students as well as for an older crowd to enjoy good beer and food.

Soon after I joined MIT, Jonathan Levav (a professor at Columbia) and I were mulling over the kinds of questions one might conjure up in such a pleasant pub. First, does the sequential process of taking orders (asking each person in turn to state his or her order) influence the choices that the people sitting around the table ultimately make? In other words, are the patrons influenced by the selections of the others around them? Second, if this is the case, does it encourage conformity or nonconformity? In other words, would the patrons sitting around a table intentionally choose beers that were different from or the same as the choices of those ordering before them? Finally, we wanted to know whether being influenced by others' choices would make people better or worse off, in terms of how much they enjoyed their beer.

THROUGHOUT THIS BOOK, I have described experiments that I hoped would be surprising and illuminating. If they were, it was largely because they refuted the common assumption that we are all fundamentally rational. Time and again I have provided examples that are contrary to Shakespeare's depiction of us in "What a piece of work is a man." In fact, these examples show that we are not noble in reason, not infinite in faculty, and rather weak in apprehension. (Frankly, I think Shakespeare knew that very well, and this speech of Hamlet's is not without irony.)

In this final chapter, I will present an experiment that offers one more example of our predictable irrationality. Then I will further describe the general economic perspective on human behavior, contrast it with behavioral economics, and draw some conclusions. Let me begin with the experiment.

TO GET TO the bottom of the sudsy barrel of questions that we thought of at the Carolina Brewery, Jonathan and I decided to plunge in—metaphorically, of course. We started by asking the manager of the Carolina Brewery to let us serve

free samples of beer to the customers—as long as we paid for the beer ourselves. (Imagine how difficult it was, later, to convince the MIT accountants that a $1,400 bill for beer is a legitimate research expense.) The manager of the bar was happy to comply. After all, he would sell us the beer and his customers would receive a free sample, which would presumably increase their desire to return to the brewery.

Handing us our aprons, he established his one and only condition: that we approach the people and get their orders for samples within one minute of the time they sat down. If we couldn't make it in time, we would indicate this to the regular waiters and they would approach the table and take the orders. This was reasonable. The manager didn't know how efficient we could be as waiters, and he didn't want to delay the service by too much. We started working.

I approached a group as soon as they sat down. They seemed to be undergraduate couples on a double date. Both guys were wearing what looked like their best slacks, and the girls had on enough makeup to make Elizabeth Taylor look unadorned in comparison. I greeted them, announced that the brewery was offering free beer samples, and then proceeded to describe the four beers:

(1) Copperline Amber Ale: A medium-bodied red ale with a well-balanced hop and malt character and a traditional ale fruitiness.

(2) Franklin Street Lager: A Bohemian pilsner-style golden lager brewed with a soft maltiness and a crisp hoppy finish.

(3) India Pale Ale: A well-hopped robust ale originally brewed to withstand the long ocean journey from England around the Cape of Good Hope to India. It is dry-hopped with cascade hops for a fragrant floral finish.

(4) Summer Wheat Ale: Bavarian-style ale, brewed with 50 percent wheat as a light, spritzy, refreshing summer drink. It is gently hopped and has a unique aroma reminiscent of banana and clove from an authentic German yeast strain.

Which would you choose?

☐ Copperline Amber Ale
☐ Franklin Street Lager
☐ India Pale Ale
☐ Summer Wheat Ale

After describing the beers, I nodded at one of the guys—the blond-haired guy—and asked for his selection; he chose the India Pale Ale. The girl with the more elaborate hairdo was next; she chose the Franklin Street Lager. Then I turned to the other girl. She opted for the Copperline Amber Ale. Her boyfriend, who was last, selected the Summer Wheat Ale. With their orders in hand, I rushed to the bar, where Bob—the tall, handsome bartender, a senior in computer science—stood smiling. Aware that we were in a hurry, he filled my order before any of the others. I then took the tray with the four two-ounce samples back to the double-

daters' table and placed their beers in front of them.

Along with their samples, I handed each of them a short survey, printed on the brewery's stationery. In this survey we asked the respondents how much they liked their beer and whether they had regretted choosing that particular brew. After I collected their surveys, I continued to observe the four people from a distance to see whether any of them took a sip of anyone else's beer. As it turned out, none of them shared a sample.

Jonathan and I repeated this procedure with 49 more tables. Then we continued, but for the next 50 tables we changed the procedure. This time, after we read the descriptions of the beers, we handed the participants a small menu with the names of the four beers and asked each of them to write down their preferred beer, rather than simply say it out loud. In so doing, we transformed ordering from a public event into a private one. This meant that each participant would not hear what the others—including, perhaps, someone they were trying hard to impress—ordered and so could not be influenced by it.

What happened? We found that when people order out loud in sequence, they choose differently from when they order in private. When ordering sequentially (publicly), they order more types of beer per table—in essence opting for variety. A basic way to understand this is by thinking about the Summer Wheat Ale. This brew was not very attractive to most people. But when the other beers were "taken," our participants felt that they had to choose something different—perhaps to show that they had a mind of their own and weren't trying to copy the others—and so they chose a different beer, one that they may not have initially wanted, but one that conveyed their individuality.

What about their enjoyment of the beer? It stands to reason that if people choose beer that nobody has chosen just to convey uniqueness, they will probably end up with a beer that they don't really want or like. And indeed this was the case. Overall, those who made their choices out loud, in the standard way that food is ordered at restaurants, were not as happy with their selections as those who made their choices privately, without taking others' opinions into consideration. There was, however, one very important exception: the first person to order beer in the group that made its decisions out loud was de facto in the same condition as the people who expressed their opinion privately, since he or she was unencumbered, in choosing, by other people's choices. Accordingly, we found that the first person to order beer in the sequential group was the happiest of his or her group and just as happy as those who chose their beers in private.

BY THE WAY, a funny thing happened when we ran the experiment in the Carolina Brewery: Dressed in my waiter's outfit, I approached one of the tables and began to read the menu to the couple there. Suddenly, I realized that the man was Rich, a graduate student in computer science, someone with whom I had worked on a project related to computational vision three or four years earlier. Because the experiment had to be conducted in the same way each time, this was not a good time for me to chat with him, so I put on a poker face and launched into a matter-of-fact description of the beers. After I finished, I nodded to Rich and asked, "What can I get you?" Instead of giving me his order, he asked how I was doing.

"Very well, thank you," I said. "Which of the beers can I get you?"

He and his companion both selected beers, and then Rich took another stab at conversation: “Dan, did you ever finish your PhD?”

“Yes,” I said, “I finished about a year ago. Excuse me; I will be right back with your beers.” As I walked to the bar to fill their order, I realized that Rich must have thought that this was my profession and that a degree in social science would only get someone a job as a beer server. When I got back to the table with the samples, Rich and his companion—who was his wife—tasted the beers and answered the short questionnaire. Then Rich tried again. He told me that he had recently read one of my papers and liked it a lot. It was a good paper, and I liked it, too, but I think he was just trying to make me feel better about my job as a beer server.

ANOTHER STUDY, CONDUCTED later at Duke with wine samples and MBA students, allowed us to measure some of the participants’ personality traits—something the manager of the Carolina Brewery had not been thrilled about. That opened the door for us to find out what might be contributing to this interesting phenomenon. What we found was a correlation between the tendency to order alcoholic beverages that were different from what other people at the table had chosen and a personality trait called “need for uniqueness.” In essence, individuals more concerned with portraying their own uniqueness were more likely to select an alcoholic beverage not yet ordered at their table in an effort to demonstrate that they were in fact one of a kind.

What these results show is that people are sometimes willing to sacrifice the pleasure they get from a particular consumption experience in order to project a certain image to others. When people order food and drinks, they seem to have two goals: to order what they will enjoy most and to portray themselves in a positive light in the eyes of their friends. The problem is that once they order, say, the food, they may be stuck with a dish they don’t like—a situation they often regret. In essence, people, particularly those with a high need for uniqueness, may sacrifice personal utility in order to gain reputational utility.

Although these results were clear, we suspected that in other cultures—where the need for uniqueness is not considered a positive trait—people who ordered aloud in public would try to portray a sense of belonging to the group and express more conformity in their choices. In a study we conducted in Hong Kong, we found that this was indeed the case. In Hong Kong, individuals also selected food that they did not like as much when they selected it in public rather than in private, but these participants were more likely to select the same item as the people ordering before them—again making a regrettable mistake, though a different type of mistake, when ordering food.

FROM WHAT I have told you so far about this experiment, you can see that a bit of simple life advice—a free lunch—comes out of this research. First, when you go to a restaurant, it’s a good idea to plan your order before the waiter approaches you, and stick to it. Being swayed by what other people choose might lead you to choose a worse alternative. If you’re afraid that you might be swayed anyway, a useful strategy is to announce your order to the table before the waiter comes. This way, you have staked a claim to your order, and it’s less likely that the other

people around the table will think you are not unique, even if someone else orders the same dish before you get your chance. But of course the best option is to order first.

Perhaps restaurant owners should ask their customers to write out orders privately (or quietly give their orders to the waiters), so that no customer will be influenced by the orders of his or her companions. We pay a lot of money for the pleasure of dining out. Getting people to order anonymously is most likely the cheapest and simplest way to increase the enjoyment derived from these experiences.

But there's a bigger lesson that I would like to draw from this experiment—and in fact from all that I have said in the preceding chapters. Standard economics assumes that we are rational—that we know all the pertinent information about our decisions, that we can calculate the value of the different options we face, and that we are cognitively unhindered in weighing the ramifications of each potential choice.

The result is that we are presumed to be making logical and sensible decisions. And even if we make a wrong decision from time to time, the standard economics perspective suggests that we will quickly learn from our mistakes either on our own or with the help of "market forces." On the basis of these assumptions, economists draw far-reaching conclusions about everything from shopping trends to law to public policy.

But, as the results presented in this book (and others) show, we are all far less rational in our decision making than standard economic theory assumes. Our irrational behaviors are neither random nor senseless—they are systematic and predictable. We all make the same types of mistakes over and over, because of the basic wiring of our brains. So wouldn't it make sense to modify standard economics and move away from naive psychology, which often fails the tests of reason, introspection, and—most important—empirical scrutiny?

Wouldn't economics make a lot more sense if it were based on how people actually behave, instead of how they should behave? As I said in the Introduction, that simple idea is the basis of behavioral economics, an emerging field focused on the (quite intuitive) idea that people do not always behave rationally and that they often make mistakes in their decisions.

In many ways, the standard economic and Shakespearean views are more optimistic about human nature, since they assume that our capacity for reasoning is limitless. By the same token the behavioral economics view, which acknowledges human deficiencies, is more depressing, because it demonstrates the many ways in which we fall short of our ideals. Indeed, it can be rather depressing to realize that we all continually make irrational decisions in our personal, professional, and social lives. But there is a silver lining: the fact that we make mistakes also means that there are ways to improve our decisions—and therefore that there are opportunities for "free lunches."

ONE OF THE main differences between standard and behavioral economics involves this concept of "free lunches." According to the assumptions of standard economics, all human decisions are rational and informed, motivated by an

accurate concept of the worth of all goods and services and the amount of happiness (utility) all decisions are likely to produce. Under this set of assumptions, everyone in the marketplace is trying to maximize profit and striving to optimize his experiences. As a consequence, economic theory asserts that there are no free lunches—if there were any, someone would have already found them and extracted all their value.

Behavioral economists, on the other hand, believe that people are susceptible to irrelevant influences from their immediate environment (which we call context effects), irrelevant emotions, shortsightedness, and other forms of irrationality (see any chapter in this book or any research paper in behavioral economics for more examples). What good news can accompany this realization? The good news is that these mistakes also provide opportunities for improvement. If we all make systematic mistakes in our decisions, then why not develop new strategies, tools, and methods to help us make better decisions and improve our overall well-being? That's exactly the meaning of free lunches from the perspective of behavioral economics—the idea that there are tools, methods, and policies that can help all of us make better decisions and as a consequence achieve what we desire.

For example, the question why Americans are not saving enough for retirement is meaningless from the perspective of standard economics. If we are all making good, informed decisions in every aspect of our lives, then we are also saving the exact amount that we want to save. We might not save much because we don't care about the future, because we are looking forward to experiencing poverty at retirement, because we expect our kids to take care of us, or because we are hoping to win the lottery—there are many possible reasons. The main point is that from the standard economic perspective, we are saving exactly the right amount in accordance with our preferences.

But from the perspective of behavioral economics, which does not assume that people are rational, the idea that we are not saving enough is perfectly reasonable. In fact, research in behavioral economics points to many possible reasons why people are not saving enough for retirement. People procrastinate. People have a hard time understanding the real cost of not saving as well as the benefits of saving. (By how much would your life be better in the future if you were to deposit an additional $1,000 in your retirement account every month for the next 20 years?) Being "house rich" helps people believe that they are indeed rich. It is easy to create consumption habits and hard to give them up. And there are many, many more reasons.

The potential for free lunches from the perspective of behavioral economics lies in new methods, mechanisms, and other interventions that would help people achieve more of what they truly want. For example, the new and innovative credit card that I described in Chapter 7, on self-control, could help people exercise more self-control within the domain of spending. Another example of this approach is a mechanism called "save more tomorrow," which Dick Thaler and Shlomo Benartzi proposed and tested a few years ago.

Here's how "save more tomorrow" works. When new employees join a company, in addition to the regular decisions they are asked to make about what percentage of their paycheck to invest in their company's retirement plan, they

are also asked what percentage of their future salary raises they would be willing to invest in the retirement plan. It is difficult to sacrifice consumption today for saving in the distant future, but it is psychologically easier to sacrifice consumption in the future, and even easier to give up a percentage of a salary increase that one does not yet have.

When the plan was implemented in Thaler and Benartzi's test, the employees joined and agreed to have their contribution, as a percentage, increase with their future salary raises. What was the outcome? Over the next few years, as the employees received raises, the saving rates increased from about 3.5 percent to around 13.5 percent—a gain for the employees, their families, and the company, which by now had more satisfied and less worried employees.

This is the basic idea of free lunches—providing benefits for all the parties involved. Note that these free lunches don't have to be without cost (implementing the self-control credit card or "save more tomorrow" inevitably involves a cost). As long as these mechanisms provide more benefits than costs, we should consider them to be free lunches—mechanisms that provide net benefits to all parties.

IF I WERE to distill one main lesson from the research described in this book, it is that we are pawns in a game whose forces we largely fail to comprehend. We usually think of ourselves as sitting in the driver's seat, with ultimate control over the decisions we make and the direction our life takes; but, alas, this perception has more to do with our desires—with how we want to view ourselves—than with reality.

Each of the chapters in this book describes a force (emotions, relativity, social norms, etc.) that influences our behavior. And while these influences exert a lot of power over our behavior, our natural tendency is to vastly underestimate or completely ignore this power. These influences have an effect on us not because we lack knowledge, lack practice, or are weak-minded. On the contrary, they repeatedly affect experts as well as novices in systematic and predictable ways. The resulting mistakes are simply how we go about our lives, how we "do business." They are a part of us.

Visual illusions are also illustrative here. Just as we can't help being fooled by visual illusions, we fall for the "decision illusions" our minds show us. The point is that our visual and decision environments are filtered to us courtesy of our eyes, our ears, our senses of smell and touch, and the master of it all, our brain. By the time we comprehend and digest information, it is not necessarily a true reflection of reality. Instead, it is our representation of reality, and this is the input we base our decisions on. In essence we are limited to the tools nature has given us, and the natural way in which we make decisions is limited by the quality and accuracy of these tools.

A second main lesson is that although irrationality is commonplace, it does not necessarily mean that we are helpless. Once we understand when and where we may make erroneous decisions, we can try to be more vigilant, force ourselves to think differently about these decisions, or use technology to overcome our inherent shortcomings. This is also where businesses and policy makers could revise their thinking and consider how to design their policies and products so as

to provide free lunches.

THANK YOU FOR reading this book. I hope you have gained some interesting insights about human behavior, gained some insight into what really makes us tick, and discovered ways to improve your decision making. I also hope that I have been able to share with you my enthusiasm for the study of rationality and irrationality. In my opinion, studying human behavior is a fantastic gift because it helps us better understand ourselves and the daily mysteries we encounter. Although the topic is important and fascinating, it is not easy to study, and there is still a lot of work ahead of us. As the Nobel laureate Murray Gell-Mann once said, "Think how hard physics would be if particles could think."

Irrationally yours,
Dan Ariely

PS: If you want to participate in this journey, log on to www.predictablyirrational.com, sign up for a few of our studies, and leave us your ideas and thoughts.

Thanks

Over the years I have been fortunate to work on joint research projects with smart, creative, generous individuals. The research described in this book is largely an outcome of their ingenuity and insight. These individuals are not only great researchers, but also close friends. They made this research possible. Any mistakes and omissions in this book are mine. (Short biographies of these wonderful researchers follow.) In addition to those with whom I have collaborated, I also want to thank my psychology and economics colleagues at large. Each idea I ever had, and every paper I ever wrote, was influenced either explicitly or implicitly by their writing, ideas, and creativity. Science advances mainly through a series of small steps based on past research, and I am fortunate to be able to take my own small steps forward from the foundation laid down by these remarkable researchers. At the end of this book, I have included some references for other academic papers related to each of the chapters. These should give the avid reader an enhanced perspective on, and the background and scope of, each topic. (But of course this isn't a complete list.)

Much of the research described in this book was carried out while I was at MIT, and many of the participants and research assistants were MIT students. The results of the experiments highlight their (as well as our own) irrationalities, and sometimes poke fun at them, but this should not be confused with a lack of caring or a lack of admiration. These students are extraordinary in their motivation, love of learning, curiosity, and generous spirit. It has been a privilege to get to know you all—you even made Boston's winters worthwhile!

Figuring out how to write in "non-academese" was not easy, but I got a lot of help along the way. My deepest thanks to Jim Levine, Lindsay Edgecombe, Elizabeth Fisher, and the incredible team at the Levine Greenberg Literary Agency. I am also indebted to Sandy Blakeslee for her insightful advice; and to Jim Bettman, Rebecca Waber, Ania Jakubek, Erin Allingham, Carlie Burck, Bronwyn Fryer, Devra Nelson, Janelle Stanley, Michal Strahilevitz, Ellen Hoffman, and Megan Hogerty for their role in helping me translate some of these ideas into words. Special thanks to my writing partner, Erik Calonius, who contributed greatly to these pages, with many real-world examples and a narrative style that helped me tell this story as well as it could be told. Special thanks also go to my trusting, supporting, and helpful editor at HarperCollins, Claire Wachtel.

I wrote the book while visiting the Institute for Advanced Study at Princeton. I cannot imagine a more ideal environment in which to think and write. I even got to spend some time in the institute's kitchen, learning to chop, bake, sauté, and cook under the supervision of chefs Michel Reymond and Yann Blanchet—I couldn't have asked for a better place to expand my horizons.

Finally, thanks to my lovely wife, Sumi, who has listened to my research stories over and over and over and over. And while I hope you agree that they are somewhat amusing for the first few reads, her patience and willingness to repeatedly lend me her ear merits sainthood. Sumi, tonight I will be home at seven-fifteen at the latest; make it eight o'clock, maybe eight-thirty; I promise.

List of Collaborators

On Amir

On joined MIT as a PhD student a year after me and became "my" first student. As my first student, On had a tremendous role in shaping what I expect from students and how I see the professor-student relationship. In addition to being exceptionally smart, On has an amazing set of skills, and what he does not know he is able to learn within a day or two. It is always exciting to work and spend time with him. On is currently a professor at the University of California at San Diego.

Marco Bertini

When I first met Marco, he was a PhD student at Harvard Business School, and unlike his fellow students he did not see the Charles River as an obstacle he should not cross. Marco is Italian, with a temperament and sense of style to match —an overall great guy you just want to go out for a drink with. Marco is currently a professor at London Business School.

Ziv Carmon

Ziv was one of the main reasons I joined Duke's PhD program, and the years we spent together at Duke justified this decision. Not only did I learn from him a great deal about decision making and how to conduct research; he also became one of my dear friends, and the advice I got from him over the years has repeatedly proved to be invaluable. Ziv is currently a professor at INSEAD's Singapore campus.

Shane Frederick

I met Shane while I was a student at Duke and he was a student at Carnegie Mellon. We had a long discussion about fish over sushi, and this has imprinted on me a lasting love for both. A few years later Shane and I both moved to MIT and had many more opportunities for sushi and lengthy discussions, including the central question of life: "If a bat and a ball cost $1.10 in total, and the bat costs a dollar more than the ball, how much does the ball cost?" Shane is currently a professor at MIT.

Ayelet Gneezy

I met Ayelet many years ago at a picnic organized by mutual friends. I had a very positive first impression of her, and my appreciation of her only increased with time. Ayelet is a wonderful person and a great friend, so it is a bit odd that the topics we decided to work on together were mistrust and revenge. Whatever drove us to start exploring these topics initially, it ended up being very useful both academically and personally. Ayelet is currently a professor at the University of California at San Diego (and if you happen to see another Gneezy on my list of collaborators, that is not because it is a popular last name).

Uri Gneezy

Uri is one of the most sarcastic and creative people I have ever met, and both of these skills make him able to effortlessly and rapidly turn out important and useful research. A few years ago, I took Uri to Burning Man, and while we were there, he completely blended into the atmosphere. On the way back, he lost some bet to me, and as a consequence, he was supposed to give a gift to a random person every day for a month—but sadly, once back in civilization, he was unable to do this. Uri is currently a professor at the University of California at San Diego.

Ernan Haruvy

Ernan and I got to spend some time together when he was at Harvard Business School and I was on the other side of the river. Ernan was one of the first people to think carefully about how the Internet can change the anonymity of human interactions and, as a consequence, the way we treat one another. He is smart and hardworking, and has an amazing willingness to help. Ernan is currently a professor at the University of Texas at Dallas.

James Heyman

James and I spent a year together at Berkeley. He would often come in to discuss some idea, bringing with him some of his recent baking outputs, and this was always a good start for an interesting discussion. Following his life's maxim that money isn't everything, his research focuses on nonfinancial aspects of marketplace transactions. One of James's passions is the many ways behavioral economics could play out in policy decisions, and over the years I have come to see the wisdom in this approach. James is currently a professor at the University of St. Thomas (in Minnesota, not the Virgin Islands).

Günter Hitsch

Günter is funny, smart, and charming—and not just relative to other economists. He is the sort of guy that you want to have a beer with, and talking with him is always an interesting yet somewhat unexpected experience. Günter is also one of the most meticulous econometricians I know, and he can spend years (I am not joking) running very complex computer models to properly estimate some obscure parameters. Günter is currently a professor at the University of Chicago.

Ali Hortaçsu

Ali is one of the most well-balanced individuals I have ever met. Nothing seems to faze him, and he is always oozing goodness (well, this is not completely true—he does seem to become a different person when the Turkish soccer team is playing). Ali was one of the first economists to take a careful look at online auctions, helping us understand how people actually behave in such auctions. Working with him on online dating has been a very educational experience for me. Ali is currently a professor at the University of Chicago.

Leonard Lee

Leonard joined the PhD program at MIT to work on topics related to e-commerce. Since we both kept long hours, we started taking breaks together late at night, and this gave us a chance to start working jointly on a few research projects. The collaboration with Leonard has been great. He has endless energy and

enthusiasm, and the number of experiments he can carry out during an average week is about what other people do in a semester. In addition, he is one of the nicest people I have ever met and always a delight to chat and work with. Leonard is currently a professor at Columbia University.

Jonathan Levav

Jonathan loves his mother like no one else I have met, and his main regret in life is that he disappointed her when he didn't go to medical school. Jonathan is smart, funny, and an incredibly social animal, able to make new friends in fractions of seconds. He is physically big with a large head, large teeth, and an even larger heart. Jonathan is currently a professor at Columbia University.

George Loewenstein

George is one of my first, favorite, and longest-time collaborators. He is also my role model. In my mind George is the most creative and broadest researcher in behavioral economics. George has an incredible ability to observe the world around him and find nuances of behavior that are important for our understanding of human nature as well as for policy. George is currently, and appropriately, the Herbert A. Simon Professor of Economics and Psychology at Carnegie Mellon University.

Nina Mazar

Nina first came to MIT for a few days to get feedback on her research and ended up staying for five years. During this time we had oodles of fun working together and I came to greatly rely on her. Nina is oblivious of obstacles, and her willingness to take on large challenges led us to carry out some particularly difficult experiments in rural India. For many years I hoped that she would never decide to leave; but, alas, at some point the time came: she is currently a professor at the University of Toronto. In an alternative reality, Nina is a high-fashion designer in Milan, Italy.

Elie Ofek

Elie is an electrical engineer by training who then saw the light (or so he believes) and switched to marketing. Not surprisingly, his main area of research and teaching is innovations and high-tech industries. Elie is a great guy to have coffee with because he has interesting insights and perspectives on every topic. Currently, Elie is a professor at Harvard Business School (or as its members call it, "The Haaarvard Business School").

Yesim Orhun

Yesim is a true delight in every way. She is funny, smart, and sarcastic. Regrettably, we had only one year to hang out while we were both at Berkeley. Yesim's research takes findings from behavioral economics and, using this starting point, provides prescriptions for firms and policy makers. For some odd reason, what really gets her going is any research question that includes the words *simultaneity* and *endogeneity*. Yesim is currently a professor at the University of Chicago.

Drazen Prelec

Drazen is one of the smartest people I have ever met and one of the main reasons I joined MIT. I think of Drazen as academic royalty: he knows what he is doing, he is sure of himself, and everything he touches turns to gold. I was hoping that by osmosis, I would get some of his style and depth, but having my office next to his was not sufficient for this. Drazen is currently a professor at MIT.

Kristina Shampanier

Kristina came to MIT to be trained as an economist, and for some odd but wonderful reason elected to work with me. Kristina is exceptionally smart, and I learned a lot from her over the years. As a tribute to her wisdom, when she graduated from MIT, she opted for a nonacademic job: she is now a high-powered consultant in Boston.

Jiwoong Shin

Jiwoong is a yin and yang researcher. On one hand he carries out research in standard economics assuming that individuals are perfectly rational; on the other hand he carries out research in behavioral economics showing that people are irrational. He is thoughtful and reflective—a philosophical type—and this duality does not faze him. Jiwoong and I started working together mostly because we wanted to have fun together, and indeed we have spent many exciting hours working together. Jiwoong is currently a professor at Yale University.

Baba Shiv

Baba and I first met when we were both PhD students at Duke. Over the years Baba has carried out fascinating research in many areas of decision making, particularly on how emotions influence decision making. He is terrific in every way and the kind of person who makes everything around him seem magically better. Baba is currently a professor at Stanford University.

Stephen Spiller

Stephen started his academic career as a student of John Lynch. John was my Ph.D. adviser as well, so in essence, Stephen and I are academic brothers, and I feel as though he is my little (but much taller) brother. Stephen is smart and creative, and it has been a privilege to watch him advance on his academic adventures. Stephen is currently a doctoral student at Duke University, and if his advisers had any say in the matter, we would try to never let him graduate.

Rebecca Waber

Rebecca is one of the most energetic and happiest people I have ever met. She is also the only person I ever observed to burst out laughing while reading her marriage vows. Rebecca is particularly interested in research on decision making applied to medical decisions, and I count myself as very lucky that she chose to work with me on these topics. Rebecca is currently a graduate student at the Media Laboratory at MIT.

Klaus Wertenbroch

Klaus and I met when he was a professor at Duke and I was a PhD student. Klaus's

interest in decision making is mostly based on his attempts to make sense of his own deviation from rationality, whether it is his smoking habit or his procrastination in delaying work for the pleasure of watching soccer on television. It was only fitting that we worked together on procrastination. Klaus is currently a professor at INSEAD.

Notes

1. Jodi Kantor, "Entrees Reach $40," *New York Times* (October 21, 2006).
2. Itamar Simonson, "Get Closer to Your Customers by Understanding How They Make Choices," *California Management Review* (1993).
3. Louis Uchitelle, "Lure of Great Wealth Affects Career Choices," *New York Times* (November 27, 2006).
4. Katie Hafner, "In the Web World, Rich Now Envy the Superrich," *New York Times* (November 21, 2006).
5. www.filenesbasement.com/bridal.php
6. Valerie Ulene, "Car Keys? Not So Fast," *Los Angeles Times* (January 8, 2007).
7. John Leland, "Debtors Search for Discipline through Blogs," *New York Times* (February 18, 2007).
8. "Email Has Made Slaves of Us," *Australian Daily Telegraph* (June 16, 2008).
9. "Studies Find Big Benefits in Marriage," *New York Times* (April 10, 1995).
10. Ralph Keeney, "Personal Decisions Are the Leading Cause of Death," *Operation Research* (2008).
11. "Pearls Before Breakfast," *Washington Post* (April 8, 2007).
12. Colin Schieman, "The History of Placebo Surgery," University of Calgary (March 2001).
13. Margaret Talbot, "The Placebo Prescription," *New York Times* (June 9, 2000).
14. Sarah Bakewell, "Cooking with Mummy," *Fortean Times* (July 1999).
15. D. J. Swank, S. C. G Swank-Bordewijk, W. C. J. Hop, et al., "Laparoscopic Adhesiolysis in Patients with Chronic Abdominal Pain: A Blinded Randomised Controlled Multi-Center Trial," *Lancet* (April 12, 2003).
16. "Off-Label Use of Prescription Drugs Should Be Regulated by the FDA," Harvard Law School, Legal Electronic Archive (December 11, 2006).
17. Irving Kirsch, "Antidepressants Proven to Work Only Slightly Better Than Placebo," *Prevention and Treatment* (June 1998).
18. Sheryl Stolberg, "Sham Surgery Returns as a Research Tool," *New York Times* (April 25, 1999).
19. Margaret E. O'Kane, National Committee for Quality Assurance, letter to the editor, *USA Today* (December 11, 2006).
20. Greil Marcus, "One Step Back: Where Are the Elixirs of Yesteryear When We Hurt?" *New York Time*s, January 26, 1998.
21. *Crisis Management: Mastering the Skills to Prevent Disasters* (Harvard Business Essentials), Harvard Business Press (2004), and "Tylenol made a hero of Johnson & Johnson: The recall that started them all," *New York Times*, March 23, 2002, by Judith Rehak.
22. Federal Bureau of Investigation, *Crime in the United States 2004—Uniform Crime Reports* (Washington, D.C.: U.S. Government Printing Office, 2005).
23. Brody Mullins, "No Free Lunch: New Ethics Rules Vex Capitol Hill," *Wall Street Journal* (January 29, 2007).
24. "Pessimism for the Future," *California Bar Journal* (November 1994).
25. Maryland Judicial Task Force on Professionalism (November 10, 2003): http://www.courts.state.md.us/publications/professionalism2003.pdf.
26. Florida Bar/Josephson Institute Study (1993).

27. *DPA Correlator*, Vol. 9, No. 3 (September 9, 2002). See also Steve Sonnenberg, "The Decline in Professionalism—A Threat to the Future of the American Association of Petroleum Geologists," *Explorer* (May 2004).
28. Jan Crosthwaite, "Moral Expertise: A Problem in the Professional Ethics of Professional Ethicists," *Bioethics,* Vol. 9 (1995): 361–379.
29. The 2002 Transparency International Corruption Perceptions Index, transparency.org.
30. McKinsey and Company, "Payments: Charting a Course to Profits" (December 2005).

Bibliography and Additional Readings

Below is a list of the papers on which the chapters were based, plus suggestions for additional readings on each topic.

Introduction

RELATED READINGS

Daniel Kahneman, Barbara L. Fredrickson, Charles A. Schreiber, and Donald A. Redelmeier, "When More Pain Is Preferred to Less: Adding a Better End," *Psychological Science* (1993).

Donald A. Redelmeier and Daniel Kahneman, "Patient's Memories of Painful Medical Treatments—Real-Time and Retrospective Evaluations of Two Minimally Invasive Procedures," *Pain* (1996).

Dan Ariely, "Combining Experiences over Time: The Effects of Duration, Intensity Changes, and On-Line Measurements on Retrospective Pain Evaluations," *Journal of Behavioral Decision Making* (1998).

Dan Ariely and Ziv Carmon, "Gestalt Characteristics of Experienced Profiles," *Journal of Behavioral Decision Making* (2000).

Chapter 1: The Truth about Relativity

RELATED READINGS

Amos Tversky, "Features of Similarity," *Psychological Review*, Vol. 84 (1977).

Amos Tversky and Daniel Kahneman, "The Framing of Decisions and the Psychology of Choice," *Science* (1981).

Joel Huber, John Payne, and Chris Puto, "Adding Asymmetrically Dominated Alternatives: Violations of Regularity and the Similarity Hypothesis," *Journal of Consumer Research* (1982).

Itamar Simonson, "Choice Based on Reasons: The Case of Attraction and Compromise Effects," *Journal of Consumer Research* (1989).

Amos Tversky and Itamar Simonson, "Context-Dependent Preferences," *Management Science* (1993).

Dan Ariely and Tom Wallsten, "Seeking Subjective Dominance in Multidimensional Space: An Explanation of the Asymmetric Dominance Effect," *Organizational Behavior and Human Decision Processes* (1995).

Constantine Sedikides, Dan Ariely, and Nils Olsen, "Contextual and Procedural Determinants of Partner Selection: On Asymmetric Dominance and Prominence," *Social Cognition* (1999).

Chapter 2: The Fallacy of Supply and Demand

BASED ON

Dan Ariely, George Loewenstein, and Drazen Prelec, "Coherent Arbitrariness: Stable Demand Curves without Stable Preferences," *Quarterly Journal of Economics* (2003).

Dan Ariely, George Loewenstein, and Drazen Prelec, "Tom Sawyer and the Construction of Value," *Journal of Economic Behavior and Organization* (2006).

RELATED READINGS

Cass R. Sunstein, Daniel Kahneman, David Schkade, and Ilana Ritov, "Predictably Incoherent Judgments," *Stanford Law Review* (2002).

Uri Simonsohn, "New Yorkers Commute More Everywhere: Contrast Effects in the Field," *Review of Economics and Statistics* (2006).

Uri Simonsohn and George Loewenstein, "Mistake #37: The Impact of Previously Faced Prices on Housing Demand," *Economic Journal* (2006).

Chapter 3: The Cost of Zero Cost

BASED ON

Kristina Shampanier, Nina Mazar, and Dan Ariely, "How Small Is Zero Price? The True Value of Free Products," *Marketing Science* (2007).

RELATED READINGS

Daniel Kahneman and Amos Tversky, "Prospect Theory: An Analysis of Decision under Risk," *Econometrica* (1979).

Eldar Shafir, Itamar Simonson, and Amos Tversky, "Reason-Based Choice," *Cognition* (1993).

Chapter 4: The Cost of Social Norms

BASED ON

Uri Gneezy and Aldo Rustichini, "A Fine Is a Price," *Journal of Legal Studies* (2000).

James Heyman and Dan Ariely, "Effort for Payment: A Tale of Two Markets," *Psychological Science* (2004).

Kathleen Vohs, Nicole Mead, and Miranda Goode, "The Psychological Consequences of Money," *Science* (2006).

RELATED READINGS

Margaret S. Clark and Judson Mills, "Interpersonal Attraction in Exchange and Communal Relationships," *Journal of Personality and Social Psychology*, Vol. 37 (1979), 12–24.

Margaret S. Clark, "Record Keeping in Two Types of Relationships," *Journal of Personality and Social Psychology*, Vol. 47 (1984).

Alan Fiske, "The Four Elementary Forms of Sociality: Framework for a Unified Theory of Social Relations," *Psychological Review* (1992).

Pankaj Aggarwal, "The Effects of Brand Relationship Norms on Consumer Attitudes and Behavior," *Journal of Consumer Research* (2004).

Chapter 5: The Power of a Free Cookie

BASED ON

Dan Ariely, Uri Gneezy, and Ernan Haruvy, "On the Discontinuity of Demand Curves at Zero: Charging More and Selling More," Working Paper, Duke University (2010).

RELATED READINGS

John Quah, "The Law of Demand and Risk Aversion," *Econometrica* (2003).

Angus Deaton and John Muellbauer, *Economics and Consumer Behavior*, Cambridge University Press, Cambridge, UK (1980).

Martin Dufwenberg and Georg Kirchsteiger, "A Theory of Sequential Reciprocity," *Games and Economic Behavior* (2004).

Armin Falk and Urs Fischbacher, "A Theory of Reciprocity," *Games and Economic Behavior* (2006).

James Coleman, *Foundations of Social Theory,* Harvard University Press, Cambridge, MA (1990).

See also readings for Chapter 4.

Chapter 6: The Influence of Arousal

BASED ON

Dan Ariely and George Loewenstein, "The Heat of the Moment: The Effect of Sexual Arousal on Sexual Decision Making," *Journal of Behavioral Decision Making* (2006).

RELATED READINGS

George Loewenstein, "Out of Control: Visceral Influences on Behavior," *Organizational Behavior and Human Decision Processes* (1996).

Peter H. Ditto, David A. Pizarro, Eden B. Epstein, Jill A. Jacobson, and Tara K. McDonald, "Motivational Myopia: Visceral Influences on Risk Taking Behavior," *Journal of Behavioral Decision Making* (2006).

Chapter 7: The Problem of Procrastination and Self-Control

BASED ON

Dan Ariely and Klaus Wertenbroch, "Procrastination, Deadlines, and Performance: Self-Control by Precommitment," *Psychological Science* (2002).

RELATED READINGS

Ted O'Donoghue and Mathew Rabin, "Doing It Now or Later," *American Economic Review* (1999).

Yaacov Trope and Ayelet Fishbach, "Counteractive Self-Control in Overcoming Temptation," *Journal of Personality and Social Psychology* (2000).

Chapter 8: The High Price of Ownership

BASED ON

Ziv Carmon and Dan Ariely, "Focusing on the Forgone: How Value Can Appear So Different to Buyers and Sellers," *Journal of Consumer Research* (2000).

James Heyman, Yesim Orhun, and Dan Ariely, "Auction Fever: The Effect of Opponents and Quasi-Endowment on Product Valuations," *Journal of Interactive Marketing* (2004).

RELATED READINGS

Richard Thaler, "Toward a Positive Theory of Consumer Choice," *Journal of Economic Behavior and Organization* (1980).

Jack Knetsch, "The Endowment Effect and Evidence of Nonreversible Indifference Curves," *American Economic Review*, Vol. 79 (1989), 1277–1284.

Daniel Kahneman, Jack Knetsch, and Richard Thaler, "Experimental Tests of the Endowment Effect and the Coase Theorem," *Journal of Political Economy* (1990).

Daniel Kahneman, Jack Knetsch, and Richard H. Thaler, "Anomalies: The Endowment Effect, Loss Aversion, and Status Quo Bias," *Journal of Economic Perspectives*, Vol. 5 (1991), 193–206.

Chapter 9: Keeping Doors Open

BASED ON

Jiwoong Shin and Dan Ariely, "Keeping Doors Open: The Effect of Unavailability on Incentives to Keep Options Viable," *Management Science* (2004).

RELATED READINGS

Sheena Iyengar and Mark Lepper, "When Choice Is Demotivating: Can One Desire Too Much of a Good Thing?" *Journal of Personality and Social Psychology* (2000).

Daniel Gilbert and Jane Ebert, "Decisions and Revisions: The Affective Forecasting of Changeable Outcomes," *Journal of Personality and Social Psychology* (2002).

Ziv Carmon, Klaus Wertenbroch, and Marcel Zeelenberg, "Option Attachment: When Deliberating Makes Choosing Feel Like Losing," *Journal of Consumer Research* (2003).

Chapter 10: The Effect of Expectations

BASED ON

John Bargh, Mark Chen, and Lara Burrows, "Automaticity of Social Behavior: Direct Effects of Trait Construct and Stereotype Activation on Action," *Journal of Personality and Social Psychology* (1996).

Margaret Shih, Todd Pittinsky, and Nalini Ambady, "Stereotype Susceptibility: Identity Salience and Shifts in Quantitative Performance," *Psychological Science* (1999).

Sam McClure, Jian Li, Damon Tomlin, Kim Cypert, Latané Montague, and Read Montague, "Neural Correlates of Behavioral Preference for Culturally Familiar Drinks," *Neuron* (2004).

Leonard Lee, Shane Frederick, and Dan Ariely, "Try It, You'll Like It: The Influence of Expectation, Consumption, and Revelation on Preferences for Beer," *Psychological Science* (2006).

Marco Bertini, Elie Ofek, and Dan Ariely, "To Add or Not to Add? The Effects of Add-Ons on Product Evaluation," Working Paper, HBS (2007).

RELATED READINGS

George Loewenstein, "Anticipation and the Valuation of Delayed Consumption," *Economic Journal* (1987).

Greg Berns, Jonathan Chappelow, Milos Cekic, Cary Zink, Giuseppe Pagnoni, and Megan Martin-Skurski, "Neurobiological Substrates of Dread," *Science* (2006).

Chapter 11: The Power of Price

BASED ON

Leonard Cobb, George Thomas, David Dillard, Alvin Merendino, and Robert Bruce, "An Evaluation of Internal Mammary Artery Ligation by a Double-Blind Technic," *New England Journal of Medicine* (1959).

Bruce Moseley, Kimberly O'Malley, Nancy Petersen, Terri Menke, Baruch Brody, David Kuykendall, John Hollingsworth, Carol Ashton, and Nelda Wray, "A Controlled Trial of Arthroscopic Surgery for Osteoarthritis of the Knee," *New England Journal of Medicine* (2002).

Baba Shiv, Ziv Carmon, and Dan Ariely, "Placebo Effects of Marketing Actions: Consumers May Get What They Pay For," *Journal of Marketing Research* (2005).

Rebecca Waber, Baba Shiv, Ziv Carmon, and Dan Ariely, "Commercial Features of Placebo and Therapeutic Efficacy," *JAMA* (2008).

RELATED READINGS

Tor Wager, James Rilling, Edward Smith, Alex Sokolik, Kenneth Casey, Richard Davidson, Stephen Kosslyn, Robert Rose, and Jonathan Cohen, "Placebo-Induced Changes in fMRI in the Anticipation and Experience of Pain," *Science* (2004).

Alia Crum and Ellen Langer, "Mind-Set Matters: Exercise and the Placebo Effect," *Psychological Science* (2007).

Chapter 12: The Cycle of Distrust

BASED ON

Ayelet Gneezy, Stephen Spiller, and Dan Ariely, "Trust in the Marketplace: A Fundamentlly Disbelieving State of Mind," Working Paper, Duke University (2010).

Marian Friestad and Peter Wright, "The Persuasion Knowledge Model: How People Cope with Persuasion Attempts," *Journal of Consumer Research* (1994).

William Forster Lloyd, "Two Lectures on the Checks to Population, Delivered Before the University of Oxford, in Michaelmas Term," Oxford Press (1833).

Günter Hitsch, Ali Hortaçsu, and Dan Ariely, "Matching and Sorting in Online Dating," *American Economic Review* (2010).

Günter Hitsch, Ali Hortaçsu, and Dan Ariely, "What Makes You Click?—Mate Preferences in Online Dating," Working Paper, University of Chicago

(2010).

RELATED READINGS

Garrett Hardin, "The Tragedy of the Commons," *Science* (1968).

Peter Darke and Robin Ritchie, "The Defensive Consumer: Advertising Deception, Defensive Processing, and Distrust," *Journal of Marketing Research* (2007).

Richard Emerson, "Social Exchange Theory," *Annual Review of Sociology* (1976).

Ernst Fehr and Simon Gachter, "Fairness and Retaliation: The Economics of Reciprocity," *Journal of Economic Perspectives* (2000).

Gita Johar, "Consumer Involvement and Deception from Implied Advertising Claims," *Journal of Marketing Research* (1995).

Scott Koslow, "Can the Truth Hurt? How Honest and Persuasive Advertising can Unintentionally Lead to Increased Consumer Skepticism," *Journal of Consumer Affairs* (2000).

Chapters 13 and 14: The Context of Our Character, Parts I and II

BASED ON

Nina Mazar and Dan Ariely, "Dishonesty in Everyday Life and Its Policy Implications," *Journal of Public Policy and Marketing* (2006).

Nina Mazar, On Amir, and Dan Ariely, "The Dishonesty of Honest People: A Theory of Self-Concept Maintenance," *Journal of Marketing Research* (2008).

RELATED READINGS

Max Bazerman and George Loewenstein, "Taking the Bias out of Bean Counting," *Harvard Business Review* (2001).

Max Bazerman, George Loewenstein, and Don Moore, "Why Good Accountants Do Bad Audits: The Real Problem Isn't Conscious Corruption. It's Unconscious Bias," *Harvard Business Review* (2002).

Maurice Schweitzer and Chris Hsee, "Stretching the Truth: Elastic Justification and Motivated Communication of Uncertain Information," *Journal of Risk and Uncertainty* (2002).

Chapter 15: Beer and Free Lunches

BASED ON

Dan Ariely and Jonathan Levav, "Sequential Choice in Group Settings: Taking the Road Less Traveled and Less Enjoyed," *Journal of Consumer Research* (2000).

Richard Thaler and Shlomo Benartzi, "Save More Tomorrow: Using Behavioral Economics to Increase Employee Savings," *Journal of Political Economy* (2004).

RELATED READINGS

Eric J. Johnson and Daniel Goldstein, "Do Defaults Save Lives?" *Science*, (2003).

Praise for *Predictably Irrational*

"This is a wonderful, eye-opening book. Deep, readable, and providing refreshing evidence that there are domains and situations in which material incentives work in unexpected ways. We humans are humans, with qualities that can be destroyed by the introduction of economic gains. A must-read!"

—Nassim Nicholas Taleb,
New York Times bestselling author of
The Black Swan: The Impact of the Highly Improbable

"Surprisingly entertaining. . . . Ariely's book makes economics and the strange happenings of the human mind fun."

—*USA Today*

"A fascinating romp through the science of decision-making that unmasks the ways that emotions, social norms, expectations, and context lead us astray."

—*Time*

"In creative ways, author Dan Ariely puts rationality to the test. . . . New experiments and optimistic ideas tumble out of him, like water from a fountain."

—*Boston Globe*

"An entertaining tour of the many ways people act against their best interests, drawing on Ariely's own ingeniously designed experiments. . . . Personal and accessible."

—*BusinessWeek*

"Ariely's book addresses some weighty issues . . . with an unexpected dash of humor."

—*Entertainment Weekly*

"This sly and lucid book is not about your grandfather's dismal science. . . . Ariely moves comfortably from the lab to broad social questions to his own life. . . . He is good-tempered company . . . and crystal clear about all he describes. But *Predictably Irrational* is a far more revolutionary book than its unthreatening manner lets on. It's a concise summary of why today's social science increasingly treats the markets-know-best model as a fairy tale."

—*New York Times Book Review*

"Inventive. . . . An accessible account. . . . The book has a lot to recommend it. Ariely is a more than capable storyteller, and he sticks

close to his own research so his writing is full of color and detail. He also has a knack for conveying the rigor of the experiments. . . . There is a fresh insight in every chapter. I could scarcely imagine a better introduction to 'behavioral economics,' a discipline of growing influence that sits on the boundary between economics and psychology. . . . Ariely's research shows that our perceptions of a good deal can be hugely influenced by marketing tricks. . . . And there is plenty there for the economic traditionalists—I am one of them—to chew on. . . . [Ariely] describe[s] with charm his relentlessly creative experiments. For anyone interested in marketing—either as a practitioner or victim—this is unmissable reading. Other readers will be engaged and looking forward to a sequel. If only more researchers could write like this, the world would be a better place."

—*Financial Times*

"A spry treatise on how the world works and how we spend our money based on other people's rules. . . . Ariely has a brilliant solution to a problem that is very real. . . . Make a point of seeing this book. That way you'll know you want it, and you will."

—*Kirkus Reviews* (starred)

"Ariely's intelligent, exuberant style and thought-provoking arguments make for a fascinating, eye-opening read."

—*Publishers Weekly*

"A taxonomy of financial folly."

—*The New Yorker*

"A marvelous book that is both thought provoking and highly entertaining, ranging from the power of placebos to the pleasures of Pepsi. Ariely unmasks the subtle but powerful tricks that our minds play on us, and shows us how we can prevent being fooled."

—Jerome Groopman, *New York Times* bestselling author of *How Doctors Think*

"Dan Ariely is a genius at understanding human behavior: no economist does a better job of uncovering and explaining the hidden reasons for the weird ways we act, in the marketplace and out. *Predictably Irrational* will reshape the way you see the world, and yourself, for good."

—James Surowiecki, author of *The Wisdom of Crowds*

"*Predictably Irrational* is a charmer—filled with clever experiments, engaging ideas, and delightful anecdotes. Dan Ariely is a wise and amusing guide to the foibles, errors, and bloopers of everyday decision-making."

—Daniel Gilbert, Professor of Psychology,

Harvard University, and author of *Stumbling on Happiness*

"*Predictably Irrational* is going to be the most influential, talked-about book in years. It is so full of dazzling insights—and so engaging—that once I started reading I couldn't put it down."

—Daniel McFadden, Nobel Laureate in Economics,
E. Morris Cox Professor of Economics,
University of California, Berkeley

"The most difficult part of investing is managing your emotions. Dan explains why that is so challenging for all of us, and how recognizing your built-in biases can help you avoid common mistakes."

—Charles Schwab,
Chairman and CEO of The Charles Schwab Corporation

"*Predictably Irrational* is wildly original. It shows why—much more often than we usually care to admit—humans make foolish, and sometimes disastrous, mistakes. Ariely not only gives us a great read; he also makes us much wiser."

—George Akerlof, Nobel Laureate in Economics,
Koshland Professor of Economics,
University of California, Berkeley

"Dan Ariely's ingenious experiments explore deeply how our economic behavior is influenced by irrational forces and social norms. In a charmingly informal style that makes it accessible to a wide audience, *Predictably Irrational* provides a standing criticism to the explanatory power of rational egotistic choice."

—Kenneth Arrow, Nobel Laureate in Economics,
Joan Kenney Professor of Economics, Stanford University

"A delightfully brilliant guide to our irrationality—and how to overcome it—in the marketplace and everyplace."

—Geoffrey Moore, author of
Crossing the Chasm and *Dealing with Darwin*

"Dan Ariely is one of the most original and consistently interesting social scientists I know. His research covers an unusually broad range of topics, and in every one of them he has produced some distinctive findings and ideas. His methodological inventiveness is remarkable."

—Professor Daniel Kahneman,
Nobel Laureate in Economics, Princeton University

"*Freakonomics* held that people respond to incentives, perhaps in undesirable ways, but always rationally. Dan Ariely shows you how people are deeply irrational, and predictably so."

—Chip Heath, coauthor of *Made to Stick*
and Professor of Organizational Behavior,
Stanford Graduate School of Business

"An exuberant book. . . . Ariely backs up each claim with examples from his own inventive research—subjects include unwitting MIT students and unsuspecting trick-or-treaters—forming an argument as charmingly anecdotal as it is convincing."

—*Seed*

"Dan has an internationally recognized reputation as a top-tier scholar and researcher. His work draws together a nice synergy between psychologists and economists, philosophers and economists, theorists and practitioners, and behavioral and conventional economists. Given that Dan has spoken to all of these groups directly in his own research for years, he is the natural person to spearhead such an effort for a book."

—Professor John List, Department of Economics,
University of Chicago

"Dan Ariely's research covers and, in fact, creates many of the major frontiers of behavioral research on decision-making. The pleasure he gets from doing research shines through his writings, which are clever, playful, humorous, hard-hitting, insightful, and uniformly fun and exciting to read."

—Paul Slovic, Founder and President of Decision Research

"Dan Ariely is an innovative, iconoclastic experimenter who manages to see more new things through those two *i*'s than almost anyone else. Ariely works at the interface of psychology, economics, and marketing, and is the only experimental scientist I can think of whose work speaks compellingly to scholars in all three disciplines. The hallmark of an Ariely experiment is that it uses an innovative experimental design to make an unusual point. His work covers a wide range of factors that affect human decision-making, from the usual suspects, inattention and confusion and myopia, to less studied issues like pain and lust."

—Alvin Roth,
Professor of Economics and
Business Administration, Harvard University

"Dan is full of passion for life in general, which is also apparent in his writing and research. Dan's research is very broad, covering many aspects and implications for the new field of behavioral economics. This includes the psychology of consumers, employees, and investors, crossing topics from dating to dishonesty. While he also loves the pure intellectual joy of ideas, this passion extends to his intrinsic desire to

help and give his work practical meaning. The range of his expertise has been valuable in my work. The demand for his experience and the excellence of his research are also clear in the many appointments and honors he has received over these few years."

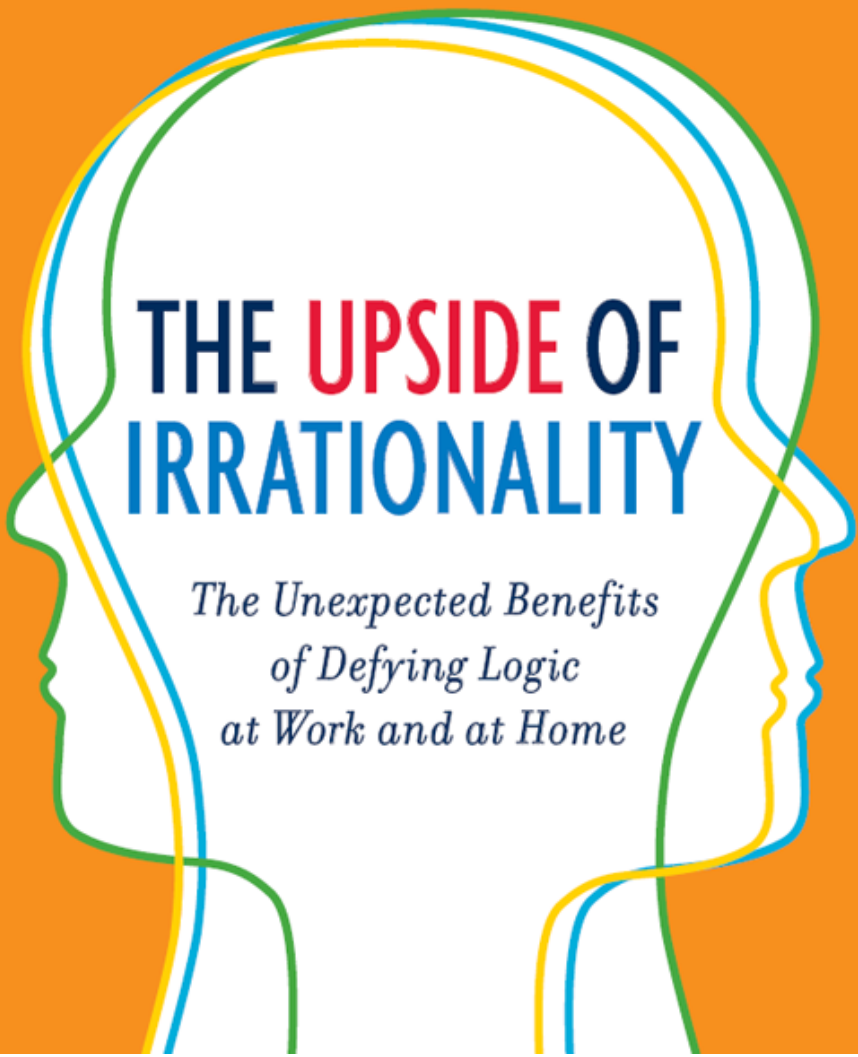
—Admiral John Marlan Poindexter, Ph.D.

"*Predictably Irrational* is a scientific but imminently readable and decidedly insightful look into why we do what we do every day . . . and why, even though we 'know better,' we may never change."

—Wenda Harris Millard,
President and Chief Operating Officer,
MediaLink LLC

DAN ARIELY

New York Times Bestselling Author of *Predictably Irrational*



THE UPSIDE OF IRRATIONALITY

The Unexpected Benefits of Defying Logic at Work and at Home

THE UPSIDE *OF* IRRATIONALITY

The Unexpected Benefits of Defying Logic at Work and at Home

Dan Ariely



HARPER
PERENNIAL

To my teachers, collaborators, and students,
for making research fun and exciting.

And to all the participants who took part in our experiments over the years—you are the engine of this research, and I am deeply grateful for all your help.

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Introduction

Lessons from Procrastination and Medical Side Effects

I don't know about you, but I have never met anyone who never procrastinates. Delaying annoying tasks is a nearly universal problem—one that is incredibly hard to curb, no matter how hard we try to exert our willpower and self-control or how many times we resolve to reform.

Allow me to share a personal story about one way I learned to deal with my own tendency to procrastinate. Many years ago I experienced a devastating accident. A large magnesium flare exploded next to me and left 70 percent of my body covered with third-degree burns (an experience I wrote about in *Predictably Irrational**). As if to add insult to injury, I acquired hepatitis from an infected blood transfusion after three weeks in the hospital. Obviously, there is never a good time to get a virulent liver disease, but the timing of its onset was particularly unfortunate because I was already in such bad shape. The disease increased the risk of complications, delayed my treatment, and caused my body to reject many skin transplants. To make matters worse, the doctors didn't know what type of liver disease I had. They knew I wasn't suffering from hepatitis A or B, but they couldn't identify the strain. After a while the illness subsided, but it still slowed my recovery by flaring up from time to time and wreaking havoc on my system.

Eight years later, when I was in graduate school, a flare-up hit me hard. I checked into the student health center, and after many blood tests the doctor gave me a diagnosis: it was hepatitis C, which had recently been isolated and identified. As lousy as I felt, I greeted this as good news. First, I finally knew what I had; second, a promising new experimental drug called interferon looked as if it might be an effective treatment for hepatitis C. The doctor asked whether I'd consider being part of an experimental study to test the efficacy of interferon. Given the threats of liver fibrosis and cirrhosis and the possibility of early death, it seemed that being part of the study was clearly the preferred path.

The initial protocol called for self-injections of interferon three times a week. The doctors told me that after each injection I would experience flulike symptoms including fever, nausea, headaches, and vomiting—warnings that I soon discovered to be perfectly accurate. But I was determined to kick the disease, so every Monday, Wednesday, and Friday evening over the next year and a half, I carried out the following ritual: Once I got home, I would take a needle from the medicine cabinet, open the refrigerator, load the syringe with the right dosage of interferon, plunge the needle deep into my thigh, and inject the medication. Then I would lie down in a big hammock—the only interesting piece of furniture in my loftlike student apartment—from which I had a perfect view of the television. I kept a bucket within reach to catch the vomit that would inevitably come and a blanket to fend off the shivering. About an hour later the nausea, shivering, and headache would set in, and at some point I would fall asleep. By noon the next day I would have more or less recovered and would return to my classwork and research.

Along with the other patients in the study, I wrestled not only with feeling sick

much of the time, but also with the basic problem of procrastination and self-control. Every injection day was miserable. I had to face the prospect of giving myself a shot followed by a sixteen-hour bout of sickness in the hope that the treatment would cure me in the long run. I had to endure what psychologists call a "negative immediate effect" for the sake of a "positive long-term effect." This is the type of problem we all experience when we fail to do short-term tasks that will be good for us down the road. Despite the prodding of conscience, we often would rather avoid doing something unpleasant now (exercising, working on an annoying project, cleaning out the garage) for the sake of a better future (being healthier, getting a job promotion, earning the gratitude of one's spouse).

At the end of the eighteen-month trial, the doctors told me that the treatment was successful and that I was the only patient in the protocol who had always taken the interferon as prescribed. Everyone else in the study had skipped the medication numerous times—hardly surprising, given the unpleasantness involved. (Lack of medical compliance is, in fact, a very common problem.)

So how did I get through those months of torture? Did I simply have nerves of steel? Like every person who walks the earth, I have plenty of self-control problems and, every injection day, I deeply wanted to avoid the procedure. But I did have a trick for making the treatment more bearable. For me, the key was movies. I love movies and, if I had the time, I would watch one every day. When the doctors told me what to expect, I decided to motivate myself with movies. Besides, I couldn't do much else anyway, thanks to the side effects.

Every injection day, I would stop at the video store on the way to school and pick up a few films that I wanted to see. Throughout the day, I would think about how much I would enjoy watching them later. Once I got home, I would give myself the injection. Then I would immediately jump into my hammock, make myself comfortable, and start my mini film fest. That way, I learned to associate the act of the injection with the rewarding experience of watching a wonderful movie. Eventually, the negative side effects kicked in, and I didn't have such a positive feeling. Still, planning my evenings that way helped me associate the injection more closely with the fun of watching a movie than with the discomfort of the side effects, and thus I was able to continue the treatment. (I was also fortunate, in this instance, that I have a relatively poor memory, which meant that I could watch some of the same movies over and over again.)

THE MORAL OF this story? All of us have important tasks that we would rather avoid, particularly when the weather outside is inviting. We all hate grinding through receipts while doing our taxes, cleaning up the backyard, sticking to a diet, saving for retirement, or, like me, undergoing an unpleasant treatment or therapy. Of course, in a perfectly rational world, procrastination would never be a problem. We would simply compute the values of our long-term objectives, compare them to our short-term enjoyments, and understand that we have more to gain in the long term by suffering a bit in the short term. If we were able to do this, we could keep a firm focus on what really matters to us. We would do our work while keeping in mind the satisfaction we'd feel when we finished our project. We would tighten our belts a notch and enjoy our improved health down the line. We would take our medications on time and hope to hear the doctor say one day, "There isn't a trace of the disease in your system."

Sadly, most of us often prefer immediately gratifying short-term experiences over our long-term objectives.* We routinely behave as if sometime in the future, we will have more time, more money, and feel less tired or stressed. "Later" seems like a rosy time to do all the unpleasant things in life, even if putting them off means eventually having to grapple with a much bigger jungle in our yard, a tax penalty, the inability to retire comfortably, or an unsuccessful medical treatment. In the end, we don't need to look far beyond our own noses to realize how frequently we fail to make short-term sacrifices for the sake of our long-term goals.

WHAT DOES ALL of this have to do with the subject of this book? In a general sense, almost everything.

From a rational perspective, we should make only decisions that are in our best interest ("should" is the operative word here). We should be able to discern among all the options facing us and accurately compute their value—not just in the short term but also in the long term—and choose the option that maximizes our best interests. If we're faced with a dilemma of any sort, we should be able to see the situation clearly and without prejudice, and we should assess pros and cons as objectively as if we were comparing different types of laptops. If we're suffering from a disease and there is a promising treatment, we should comply fully with the doctor's orders. If we are overweight, we should buckle down, walk several miles a day, and live on broiled fish, vegetables, and water. If we smoke, we should stop—no ifs, ands, or buts.

Sure, it would be nice if we were more rational and clearheaded about our "should"s. Unfortunately, we're not. How else do you explain why millions of gym memberships go unused or why people risk their own and others' lives to write a text message while they're driving or why . . . (put your favorite example here)?

THIS IS WHERE behavioral economics enters the picture. In this field, we don't assume that people are perfectly sensible, calculating machines. Instead, we observe how people actually behave, and quite often our observations lead us to the conclusion that human beings are irrational.

To be sure, there is a great deal to be learned from rational economics, but some of its assumptions—that people always make the best decisions, that mistakes are less likely when the decisions involve a lot of money, and that the market is self-correcting—can clearly lead to disastrous consequences.

To get a clearer idea of how dangerous it can be to assume perfect rationality, think about driving. Transportation, like the financial markets, is a man-made system, and we don't need to look very far to see other people making terrible and costly mistakes (due to another aspect of our biased worldview, it takes a bit more effort to see our own errors). Car manufacturers and road designers generally understand that people don't always exercise good judgment while driving, so they build vehicles and roads with an eye to preserving drivers' and passengers' safety. Automobile designers and engineers try to compensate for our limited human ability by installing seat belts, antilock brakes, rearview mirrors, air bags, halogen lights, distance sensors, and more. Similarly, road designers put safety margins along the edge of the highway, some festooned with cuts that make a *brrrrrr* sound when you drive on them. But despite all these safety precautions, human beings

persist in making all kinds of errors while driving (including drinking and texting), suffering accidents, injuries, and even death as a result.

Now think about the implosion of Wall Street in 2008 and its attendant impact on the economy. Given our human foibles, why on earth would we think we don't need to take any external measures to try to prevent or deal with systematic errors of judgment in the man-made financial markets? Why not create safety measures to help keep someone who is managing billions of dollars, and leveraging this investment, from making incredibly expensive mistakes?

EXACERBATING THE BASIC problem of human error are technological developments that are, in principle, very useful but that can also make it more difficult for us to behave in a way that truly maximizes our interests. Consider the cell phone, for example. It's a handy gadget that lets you not only call but also text and e-mail your friends. If you text while walking, you might look at your phone instead of the sidewalk and risk running into a pole or another person. This would be embarrassing but hardly fatal. Allowing your attention to drift while walking is not so bad; but add a car to the equation, and you have a recipe for disaster.

Likewise, think about how technological developments in agriculture have contributed to the obesity epidemic. Thousands of years ago, as we burned calories hunting and foraging on the plains and in the jungles, we needed to store every possible ounce of energy. Every time we found food containing fat or sugar, we stopped and consumed as much of it as we could. Moreover, nature gave us a handy internal mechanism: a lag of about twenty minutes between the time when we'd actually consumed enough calories and the time when we felt we had enough to eat. That allowed us to build up a little fat, which came in handy if we later failed to bring down a deer.

Now jump forward a few thousand years. In industrialized countries, we spend most of our waking time sitting in chairs and staring at screens rather than chasing after animals. Instead of planting, tending, and harvesting corn and soy ourselves, we have commercial agriculture do it for us. Food producers turn the corn into sugary, fattening stuff, which we then buy from fast-food restaurants and supermarkets. In this Dunkin' Donuts world, our love of sugar and fat allows us to quickly consume thousands of calories. And after we have scarfed down a bacon, egg, and cheese breakfast bagel, the twenty-minute lag time between having eaten enough and realizing that we're stuffed allows us to add even more calories in the form of a sweetened coffee drink and a half-dozen powdered-sugar donut holes.

Essentially, the mechanisms we developed during our early evolutionary years might have made perfect sense in our distant past. But given the mismatch between the speed of technological development and human evolution, the same instincts and abilities that once helped us now often stand in our way. Bad decision-making behaviors that manifested themselves as mere nuisances in earlier centuries can now severely affect our lives in crucial ways.

When the designers of modern technologies don't understand our fallibility, they design new and improved systems for stock markets, insurance, education, agriculture, or health care that don't take our limitations into account (I like the term "human-incompatible technologies," and they are everywhere). As a consequence, we inevitably end up making mistakes and sometimes fail magnificently.

THIS PERSPECTIVE OF human nature may seem a bit depressing on the surface, but it doesn't have to be. Behavioral economists want to understand human frailty and to find more compassionate, realistic, and effective ways for people to avoid temptation, exert more self-control, and ultimately reach their long-term goals. As a society, it's extremely beneficial to understand how and when we fail and to design/invent/create new ways to overcome our mistakes. As we gain some understanding about what really drives our behaviors and what steers us astray—from business decisions about bonuses and motivation to the most personal aspects of life such as dating and happiness—we can gain control over our money, relationships, resources, safety, and health, both as individuals and as a society.

This is the real goal of behavioral economics: to try to understand the way we really operate so that we can more readily observe our biases, be more aware of their influences on us, and hopefully make better decisions. Although I can't imagine that we will ever become perfect decision makers, I do believe that an improved understanding of the multiple irrational forces that influence us could be a useful first step toward making better decisions. And we don't have to stop there. Inventors, companies, and policy makers can take the additional steps to redesign our working and living environments in ways that are naturally more compatible with what we can and cannot do.

In the end, this is what behavioral economics is about—figuring out the hidden forces that shape our decisions, across many different domains, and finding solutions to common problems that affect our personal, business, and public lives.

AS YOU WILL see in the pages ahead, each chapter in this book is based on experiments I carried out over the years with some terrific colleagues (at the end of the book, I have included short biographies of my wonderful collaborators). In each of these chapters, I've tried to shed some light on a few of the biases that plague our decisions across many different domains, from the workplace to personal happiness.

Why, you may ask, do my colleagues and I put so much time, money, and energy into experiments? For social scientists, experiments are like microscopes or strobe lights, magnifying and illuminating the complex, multiple forces that simultaneously exert their influences on us. They help us slow human behavior to a frame-by-frame narration of events, isolate individual forces, and examine them carefully and in more detail. They let us test directly and unambiguously what makes human beings tick and provide a deeper understanding of the features and nuances of our own biases.*

There is one other point I want to emphasize: if the lessons learned in any experiment were limited to the constrained environment of that particular study, their value would be limited. Instead, I invite you to think about experiments as an illustration of general principles, providing insight into how we think and how we make decisions in life's various situations. My hope is that once you understand the way our human nature truly operates, you can decide how to apply that knowledge to your professional and personal life.

In each chapter I have also tried to extrapolate some possible implications for life, business, and public policy—focusing on what we can do to overcome our irrational blind spots. Of course, the implications I have sketched are only partial. To get real value from this book and from social science in general, it is important

that you, the reader, spend some time thinking about how the principles of human behavior apply to your life and consider what you might do differently, given your new understanding of human nature. That is where the real adventure lies.

READERS FAMILIAR WITH *Predictably Irrational* might want to know how this book differs from its predecessor. In *Predictably Irrational*, we examined a number of biases that lead us—particularly as consumers—into making unwise decisions. The book you hold in your hands is different in three ways.

First—and most obviously—this book differs in its title. Like its predecessor, it's based on experiments that examine how we make decisions, but its take on irrationality is somewhat different. In most cases, the word "irrationality" has a negative connotation, implying anything from mistakenness to madness. If we were in charge of designing human beings, we would probably work as hard as we could to leave irrationality out of the formula; in *Predictably Irrational*, I explored the downside of our human biases. But there is a flip side to irrationality, one that is actually quite positive. Sometimes we are fortunate in our irrational abilities because, among other things, they allow us to adapt to new environments, trust other people, enjoy expending effort, and love our kids. These kinds of forces are part and parcel of our wonderful, surprising, innate—albeit irrational—human nature (indeed, people who lack the ability to adapt, trust, or enjoy their work can be very unhappy). These irrational forces help us achieve great things and live well in a social structure. The title *The Upside of Irrationality* is an attempt to capture the complexity of our irrationalities—the parts that we would rather live without and the parts that we would want to keep if we were the designers of human nature. I believe that it is important to understand both our beneficial and our disadvantageous quirks, because only by doing so can we begin to eliminate the bad and build on the good.

Second, you will notice that this book is divided into two distinct parts. In the first part, we'll look more closely at our behavior in the world of work, where we spend much of our waking lives. We'll question our relationships—not just with other people but with our environments and ourselves. What is our relationship with our salaries, our bosses, the things we produce, our ideas, and our feelings when we've been wronged? What really motivates us to perform well? What gives us a sense of meaning? Why does the "Not-Invented-Here" bias have such a foothold in the workplace? Why do we react so strongly in the face of injustice and unfairness?

In the second part, we'll move beyond the world of work to investigate how we behave in our interpersonal relations. What is our relationship to our surroundings and our bodies? How do we relate to the people we meet, those we love, and faraway strangers who need our help? And what is our relationship to our emotions? We'll examine the ways we adapt to new conditions, environments, and lovers; how the world of online dating works (and doesn't); what forces dictate our response to human tragedies; and how our reactions to emotions in a given moment can influence patterns of behavior long into the future.

The Upside of Irrationality is also very different from *Predictably Irrational* because it is highly personal. Though my colleagues and I try to do our best to be as objective as possible in running and analyzing our experiments, much of this book (particularly the second part) draws on some of my difficult experiences as a

burn patient. My injury, like all severe injuries, was very traumatic, but it also very quickly shifted my outlook on many aspects of life. My journey provided me with some unique perspectives on human behavior. It presented me with questions that I might not have otherwise considered but, because of my injury, became central to my life and the focus of my research. Far beyond that, and perhaps more important, it led me to study how my own biases work. In describing my personal experiences and biases, I hope to shed some light on the thought process that has led me to my particular interest and viewpoints and illustrate some of the essential ingredients of our common human nature—yours and mine.

AND NOW FOR the journey. . .

Part I

The Unexpected Ways We Defy Logic at Work

Chapter 1
Paying More for Less

Why Big Bonuses Don't Always Work

Imagine that you are a plump, happy laboratory rat. One day, a gloved human hand carefully picks you out of the comfy box you call home and places you into a different, less comfy box that contains a maze. Since you are naturally curious, you begin to wander around, whiskers twitching along the way. You quickly notice that some parts of the maze are black and others are white. You follow your nose into a white section. Nothing happens. Then you take a left turn into a black section. As soon as you enter, you feel a very nasty shock surge through your paws.

Every day for a week, you are placed in a different maze. The dangerous and safe places change daily, as do the colors of the walls and the strength of the shocks. Sometimes the sections that deliver a mild shock are colored red. Other times, the parts that deliver a particularly nasty shock are marked by polka dots. Sometimes the safe parts are covered with black-and-white checks. Each day, your job is to learn to navigate the maze by choosing the safest paths and avoiding the shocks (your reward for learning how to safely navigate the maze is that you aren't shocked). How well do you do?

More than a century ago, psychologists Robert Yerkes and John Dodson* performed different versions of this basic experiment in an effort to find out two things about rats: how fast they could learn and, more important, what intensity of electric shocks would motivate them to learn fastest. We could easily assume that as the intensity of the shocks increased, so would the rats' motivation to learn. When the shocks were very mild, the rats would simply mosey along, unmotivated by the occasional painless jolt. But as the intensity of the shocks and discomfort increased, the scientists thought, the rats would feel as though they were under enemy fire and would therefore be more motivated to learn more quickly. Following this logic we would assume that when the rats really wanted to avoid the most intense shocks, they would learn the fastest.

We are usually quick to assume that there is a link between the magnitude of the incentive and the ability to perform better. It seems reasonable that the more motivated we are to achieve something, the harder we will work to reach our goal, and that this increased effort will ultimately move us closer to our objective. This, after all, is part of the rationale behind paying stockbrokers and CEOs sky-high bonuses: offer people a very large bonus, and they will be motivated to work and perform at very high levels.

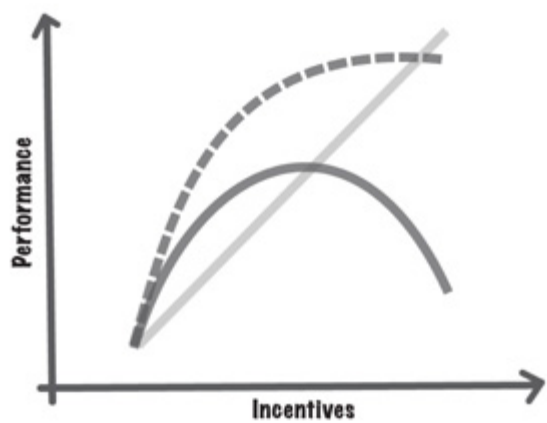
Sometimes our intuitions about the links between motivation and performance (and, more generally, our behavior) are accurate; at other times, reality and intuition just don't jibe. In Yerkes and Dodson's case, some of the results aligned with what most of us might expect, while others did not. When the shocks were very weak,

the rats were not very motivated, and, as a consequence, they learned slowly. When the shocks were of medium intensity, the rats were more motivated to quickly figure out the rules of the cage, and they learned faster. Up to this point, the results fit with our intuitions about the relationship between motivation and performance.

But here was the catch: when the shock intensity was very high, the rats performed worse! Admittedly, it is difficult to get inside a rat's mind, but it seemed that when the intensity of the shocks was at its highest, the rats could not focus on anything other than their fear of the shock. Paralyzed by terror, they had trouble remembering which parts of the cage were safe and which were not and, so, were unable to figure out how their environment was structured.

The graph below shows three possible relationships between incentive (payment, shocks) and performance. The light gray line represents a simple relationship, where higher incentives always contribute in the same way to performance. The dashed gray line represents a diminishing-returns relationships between incentives and performance.

The solid dark line represents Yerkes and Dodson's results. At lower levels of motivation, adding incentives helps to increase performance. But as the level of the base motivation increases, adding incentives can backfire and reduce performance, creating what psychologists often call an "inverse-U relationship."



Yerkes and Dodson's experiment should make us wonder about the real relationship between payment, motivation, and performance in the labor market. After all, their experiment clearly showed that incentives can be a double-edged sword. Up to a certain point, they motivate us to learn and perform well. But beyond that point, motivational pressure can be so high that it actually *distracts* an individual from concentrating on and carrying out a task—an undesirable outcome for anyone.

Of course, electric shocks are not very common incentive mechanisms in the real world, but this kind of relationship between motivation and performance

might also apply to other types of motivation: whether the reward is being able to avoid an electrical shock or the financial rewards of making a large amount of money. Let's imagine how Yerkes and Dodson's results would look if they had used money instead of shocks (assuming that the rats actually wanted money). At small bonus levels, the rats would not care and not perform very well. At medium bonus levels, the rats would care more and perform better. But, at very high bonus levels, they would be "overmotivated." They would find it hard to concentrate, and, as a consequence, their performance would be worse than if they were working for a smaller bonus.

So, would we see this inverse-U relationship between motivation and performance if we did an experiment using people instead of rats and used money as the motivator? Or, thinking about it from a more pragmatic angle, would it be financially efficient to pay people very high bonuses in order to get them to perform well?

The Bonus Bonanza

In light of the financial crisis of 2008 and the subsequent outrage over the continuing bonuses paid to many of those deemed responsible for it, many people wonder how incentives really affect CEOs and Wall Street executives. Corporate boards generally assume that very large performance-based bonuses will motivate CEOs to invest more effort in their jobs and that the increased effort will result in higher-quality output.* But is this really the case? Before you make up your mind, let's see what the empirical evidence shows.

To test the effectiveness of financial incentives as a device for enhancing performance, Nina Mazar (a professor at the University of Toronto), Uri Gneezy (a professor at the University of California at San Diego), George Loewenstein (a professor at Carnegie Mellon University), and I set up an experiment. We varied the amount of financial bonuses participants could receive if they performed well and measured the effect that the different incentive levels had on performance. In particular, we wanted to see whether offering very large bonuses would increase performance, as we usually expect, or decrease performance, analogous to Yerkes and Dodson's experiment with rats.

We decided to offer some participants the opportunity to earn a relatively small bonus (equivalent to about one day's pay at their regular pay rate). Others would have a chance to earn a medium-sized bonus (equivalent to about two weeks' pay at their regular rate). The fortunate few, and the most important group for our purposes, could earn a very large bonus, equal to about five months of their regular pay. By comparing the performances of these three groups, we hoped to get a better idea of how effective the bonuses were in improving performance.

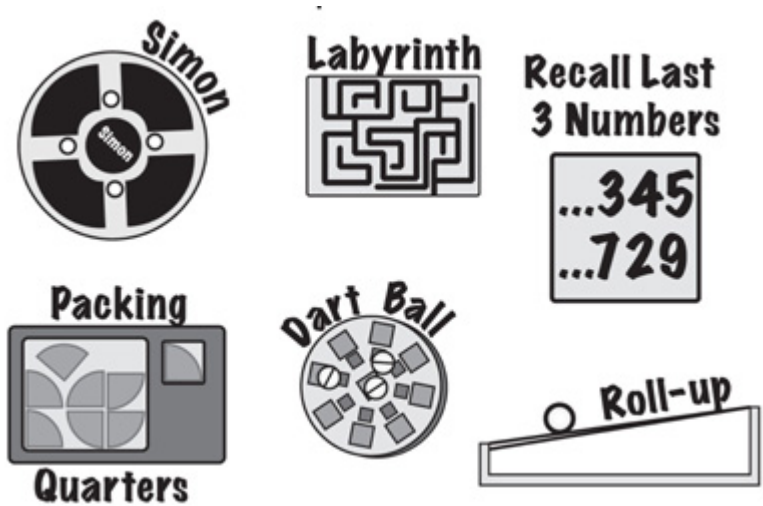
I know you are thinking "Where can I sign up for this experiment?" But before you make extravagant assumptions about my research budget, let me tell you that we did what many companies are doing these days—we outsourced the operation to rural India, where the average person's monthly spending was about 500 rupees (approximately $11). This allowed us to offer bonuses that were very meaningful to our participants without raising the eyebrows and ire of the university's accounting system.

Once we decided where to run our experiments, we had to select the tasks

themselves. We thought about using tasks that were based on pure effort, such as running, doing squats, or lifting weights, but since CEOs and other executives don't earn their money by doing those kinds of things, we decided to focus on tasks that required creativity, concentration, memory, and problem-solving skills. After trying out a whole range of tasks on ourselves and on some students, the six tasks we selected were:

1. Packing Quarters: In this spatial puzzle, the participant had to fit nine quarter-circle wedges into a square. Fitting eight of them is simple, but fitting all nine is nearly impossible.
2. Simon: A bold-colored relic of the 1980s, this is (or was) a common electronic memory game requiring the participant to repeat increasingly longer sequences of lit-up colored buttons without error.
3. Recall Last Three Numbers: Just as it sounds, this is a simple game in which we read a sequence of numbers (23, 7, 65, 4, and so on) and stopped at a random moment. Participants had to repeat the last three numbers.
4. Labyrinth: A game in which the participant used two levers to control the angle of a playing surface covered with a maze and riddled with holes. The goal was to advance a small ball along a path and avoid the holes.
5. Dart Ball: A game much like darts but played with tennis balls covered with the looped side of Velcro and a target covered with the hooked side so that the balls would stick to it.
6. Roll-up: A game in which the participant moved two rods apart in order to move a small ball as high up as possible on an inclining slope.

A graphic illustration of the six games used in the experiment in India



Having chosen the games, we packed six of each type into a large box and shipped them to India. For some mysterious reason, the people at customs in India were not too happy with the battery-powered Simon games, but after we paid a 250 percent import tax, the games were released and we were ready to start our experiment.

We hired five graduate students in economics from Narayanan College in the southern Indian city of Madurai and asked them to go to a few of the local villages. In each of these, the students had to find a central public space, such as a small hospital or a meeting room, where they could set up shop and recruit participants for our experiment.

One of the locations was a community center, where Ramesh, a second-year master's student, got to work. The community center was not fully finished, with no tiles on the floors and unpainted walls, but it was fully functional and, most important, it provided protection from wind, rain, and heat.

Ramesh positioned the six games around the room and then went outside to hail his first participant. Soon a man walked by, and Ramesh immediately tried to interest him in the experiment. "We have a few fun tasks here," he explained to the man. "Would you be interested in participating in an experiment?" The deal sounded suspiciously like a government-sponsored activity to the passerby, so it wasn't surprising that the fellow just shook his head and continued to walk on. But Ramesh persisted: "You can make some money in this experiment, and it's sponsored by the university." And so our first participant, whose name was Nitin, turned around and followed Ramesh into the community center.

Ramesh showed Nitin all the tasks that were set up around the room. "These are the games we will play today," he told Nitin. "They should take about an hour. Before we start, let's find out how much you could get paid." Ramesh then rolled a die. It landed on 4, which according to our randomization process placed Nitin in the medium-level bonus condition, which meant that the total bonus he could make from all six games was 240 rupees—or about two weeks' worth of pay for the average person in this part of rural India.

Next, Ramesh explained the instructions to Nitin. "For each of the six games," he said, "we have a medium level of performance we call good and a high level of performance we call very good. For each game in which you reach the good level of performance, you will get twenty rupees, and for each game in which you reach the very good level of performance you will get forty rupees. In games in which you don't even reach the good level, you will get nothing. This means that your payment will be somewhere between zero rupees and two hundred forty rupees, depending on your performance."

Nitin nodded, and Ramesh picked the Simon game at random. In this game, one of the four colored buttons lights up and plays a single musical tone. Nitin was supposed to press the lighted button. Then the device would light the same button followed by another one; Nitin would press those two buttons in succession; and so on through an increasing number of buttons. As long as Nitin remembered the sequence and didn't make any mistakes, the game kept going and the length of the sequence increased. But once Nitin got a sequence wrong, the game would end and Nitin's score would be equal to his largest correct sequence. In total, Nitin was allowed ten tries to reach the desired score.

"Now let me tell you what good and very good mean in this game," Ramesh

continued. “If you manage to correctly repeat a sequence of six steps on at least one of the ten times you play, that’s a good level of performance and will earn you twenty rupees. If you correctly repeat a sequence of eight steps, that’s a very good level of performance and you will get forty rupees. After ten attempts, we will begin the next game. Is everything clear about the game and the rules for payment?”

Nitin was quite excited about the prospect of earning so much money. “Let’s start,” he said, and so they did.

The blue button was the first to light up, and Nitin pressed it. Next came the yellow button, and Nitin pressed the blue and yellow buttons in turn. Not so hard. He did fine when the green button lit up next but unfortunately failed on the fourth button. In the next game, he did not do much better. In the fifth game, however, he remembered a sequence of seven, and in the sixth game he managed to get a sequence of eight. Overall, the game was a success, and he was now 40 rupees richer.

The next game was Packing Quarters, followed by Recall Last Three Numbers, Labyrinth, Dart Ball, and finally Roll-up. By the end of the hour, Nitin had reached a very good performance level on two of the games and a good performance level on two others. But he failed to reach the good level of performance for two of the games. In total, he made 120 rupees—a little more than a week’s pay—so he walked out of the community center a delighted man.

The next participant was Apurve, an athletic and slightly balding man in his thirties and the proud father of twins. Apurve rolled the die and it landed on 1, a number that, according to our randomization process, placed Apurve in the low-level bonus condition. This meant that the total bonus he could make from all six games was 24 rupees, or about one day of pay.

The first game Apurve played was Recall Last Three Numbers, followed by Roll-up, Packing Quarters, Labyrinth, and Simon, and ending with Dart Ball. Overall, he did rather well. He reached a good performance level in three of the games and a very good performance level in one. This put him on more or less the same performance level as Nitin, but, thanks to the unlucky roll of the die, he made only 10 rupees. Still, he was happy to receive that amount for an hour of playing games.

When Ramesh rolled the die for the third participant, Anoopum, it landed on 5. According to our randomization process, this placed him in the highest-level bonus condition. Ramesh explained to Anoopum that for each game in which he reached the good level of performance he would be paid 200 rupees and that he would receive 400 rupees for each game in which he reached the very good score. Anoopum made a quick calculation: six games multiplied by 400 rupees equaled 2,400 rupees—a veritable fortune, roughly equivalent to five months’ pay. Anoopum couldn’t believe his good luck.

The first randomly selected game for Anoopum was Labyrinth.* Anoopum was instructed to place a small steel ball at the start position and then use the two knobs to advance the small ball through the maze while helping it avoid the trap holes. “We’ll play this game ten times,” Ramesh said. “If you manage to advance the ball past the seventh hole, we’ll call this a good level of performance, for which you will be paid two hundred rupees. If you manage to advance the ball past the ninth hole, we’ll call that a very good level of performance, and you will get four hundred rupees. When we’ve finished with this game, we’ll go on to the next.

Everything clear?"

Anoopum nodded eagerly. He grabbed the two knobs that controlled the tilt of the maze surface and stared at the steel ball in its "start" position as if it were prey. "This is very, very important," he mumbled. "I must succeed."

He set the ball rolling; almost immediately, it fell into the first trap. "Nine more chances," he said aloud to encourage himself. But he was under the gun, and his hands were now trembling. Unable to control the fine movements of his hands, he failed time after time. Having flubbed Labyrinth, he saw the wonderful images of what he would do with his small fortune slowly dissolve.

The next game was Dart Ball. Standing twenty feet away, Anoopum tried to hit the Velcro center of the target. He hurled one ball after another, throwing one from below like a softball pitch, another from above as in cricket, and even from the side. Some of the balls came very close to the target, but none of his twenty throws stuck to the center.

The Packing Quarters game was sheer frustration. In a minuscule two minutes, Anoopum had to fit the nine pieces into the puzzle in order to earn 400 rupees (if he took four minutes, he could earn 200 rupees). As the clock ticked, Ramesh read out the remaining time every thirty seconds: "Ninety seconds! Sixty seconds! Thirty seconds!" Poor Anoopum tried to work faster and faster, applying more and more force to fit all nine of the wedges into the square, but to no avail.

At the end of the four minutes, the Packing Quarters game was abandoned. Ramesh and Anoopum moved on to the Simon game. Anoopum felt somewhat frustrated, but he braced himself and tried his utmost to focus on the task at hand.

His first attempt with Simon resulted in a two-light sequence—not very promising. But, on the second try, he managed to recall a sequence of six. He beamed, because he knew that he had finally made at least 200 rupees, and he had eight more chances to make it to 400. Feeling as though he was finally able to do something well, he tried to increase his concentration, willing his memory to a higher plane of performance. In the next eight attempts, he was able to remember sequences of six and seven, but he never made it to eight.

With two more games to go, Anoopum decided to take a short break. He went through calming breathing exercises, exhaling a long "Om" with each breath. After several minutes, he felt ready for the Roll-up game. Unfortunately, he failed both the Roll-up game and the Recall Last Three Numbers task. As he left the community center, he comforted himself with the thought of the 200 rupees he had earned—a nice sum for a few games—but his frustration at not having gotten the larger sum was evident on his furrowed brow.

The Results: Drumroll, Please . . .

After a few weeks, Ramesh and the other four graduate students finished the data collection in a number of villages and mailed me the performance records. I was very eager to take a first look at the results. Was our Indian experiment worth the time and effort? Would the different levels of bonuses tally with the levels of performance? Would those who could receive the highest bonuses perform better? Worse?

For me, taking a first peek into a data set is one of the most exciting experiences in research. Though it's not quite as thrilling as, say, catching a first glimpse of

one's child on an ultrasound, it's easily more wonderful than opening a birthday present. In fact, for me there's a ceremonial aspect to viewing a first set of statistical analysis. Early on in my research career, after having spent weeks or months of collecting data, I would enter all the numbers into a data set and format it for statistical analysis. Weeks and months of work would bring me to the point of discovery, and I wanted to be sure to celebrate the moment. I would take a break and pour myself a glass of wine or make a cup of tea. Only then would I sit down to celebrate the magical moment when the solution to the experimental puzzle I had been working on was finally revealed.

That magical moment is infrequent for me these days. Now that I'm no longer a student, my calendar is filled with commitments and I no longer have time to analyze experimental data myself. So, under normal circumstances, my students or collaborators take the first pass at the data analysis and experience the rewarding moment themselves. But when the data from India arrived, I was itching to have this experience once again. So I persuaded Nina to give me the data set and made her promise that she would not look at the data while I worked on it. Nina promised, and I reinstated my data analysis ritual, wine and all.

BEFORE I TELL you the results, how well do you think the participants in the three groups did? Would you guess that those who could earn a medium-level bonus did better than those who were faced with the small one? Do you think those hoping for a very large bonus did better than those who could achieve a medium-level one? We found that those who could earn a small bonus (equivalent to one day of pay) and the medium-level bonus (equivalent to two weeks' worth of work) did not differ much from each other. We concluded that since even our small payment was worth a substantial amount to our participants, it probably already maximized their motivation. But how did they perform when the very large bonus (the amount equivalent to five months of their regular pay rate) was on the line? As you can tell from the figure above, the data from our experiment showed that people, at least in this regard, are very much like rats. Those who stood to earn the most demonstrated the lowest level of performance. Relative to those in the low- or medium-bonus conditions, they achieved good or very good performance less than a third of the time. The experience was so stressful to those in the very-large-bonus condition that they choked under the pressure, much like the rats in the Yerkes and Dodson experiment.

The graph below summarizes the results for the three bonus conditions across the six games. The "very good" line represents the percentage of people in each condition who achieved this level of performance. The "earnings" line represents the percentage of total payoff that people in each condition earned.



Supersizing the Incentive

I should probably tell you now that we didn't start out running our experiments in the way I just described. Initially, we set about to place some extra stress on our participants. Given our limited research budget, we wanted to create the strongest incentive we could with the fixed amount of money we had. We chose to do this by adding the force of loss aversion to the mix.* Loss aversion is the simple idea that the misery produced by losing something that we feel is ours—say, money—outweighs the happiness of gaining the same amount of money. For example, think about how happy you would be if one day you discovered that due to a very lucky investment, your portfolio had increased by 5 percent. Contrast that fortunate feeling to the misery that you would feel if, on another day, you discovered that due to a very unlucky investment, your portfolio had decreased by 5 percent. If your unhappiness with the loss would be higher than the happiness with the gain, you are susceptible to loss aversion. (Don't worry; most of us are.)

To introduce loss aversion into our experiment, we prepaid participants in the small-bonus condition 24 rupees (6 times 4). Participants in the medium-bonus condition received 240 rupees (6 times 40), and participants in the very-large-bonus condition were prepaid 2,400 rupees (6 times 400). We told them that if they got to the very good level of performance, we would let them keep all of the payment for that game; if they got to the good level of performance, we would take back half of the amount per game; and if they did not even reach the good level of performance, we would take back the entire amount per game. We thought that our participants would feel more motivated to avoid losing the money than they would by just trying to earn it.

Ramesh carried out this version of the experiment in a different village with two participants. But he went no further because this approach presented us with a unique experimental challenge. When the first participant stepped into the community center, we gave him all the money he could conceivably make from the experiment—2,400 rupees, equivalent to about five months' salary—in

advance. He didn't manage to do any task well, and, unfortunately for him, he had to return all the money. At that point we looked forward to seeing if the rest of the participants would exhibit a similar pattern. Lo and behold, the next participant couldn't manage any of the tasks either. The poor fellow was so nervous that he shook the whole time and couldn't concentrate. But this guy did not play according to our rules, and at the end of the session he ran away with all of our money. Ramesh didn't have the heart to chase him. After all, who could blame the poor guy? This incident made us realize that including loss aversion might not work in this experiment, so we switched to paying people at the end.

There was another reason why we wanted to prepay participants: we wanted to try to capture the psychological reality of bonuses in the marketplace. We thought that paying up front was analogous to the way many professionals think about their expected bonuses every year. They come to think of the bonuses as largely given and as a standard part of their compensation. They often even make plans for spending it. Perhaps they eye a new house with a mortgage that would otherwise be out of reach or plan a trip around the world. Once they start making such plans, I suspect that they might be in the same loss aversion mind-set as the prepaid participants.

Thinking versus Doing

We were certain that there would be some limits to the negative effect of high reward on performance—after all, it seemed unlikely that a significant bonus would reduce performance in all situations. And it seemed natural to expect that one limiting factor (what psychologists call a "moderator") would depend on the level of mental effort the task required. The more cognitive skill involved, we thought, the more likely that very high incentives would backfire. We also thought that higher rewards would more likely lead to higher performance when it came to noncognitive, mechanical tasks. For example, what if I were to pay you for every time you jump in the next twenty-four hours? Wouldn't you jump a lot, and wouldn't you jump more if the payment were higher? Would you reduce your jumping speed or stop while you still had the ability to keep going if the amount were very large? Unlikely. In cases where the tasks are very simple and mechanical, it's hard to imagine that very high motivation would backfire.

This reasoning is why we included a wide range of tasks in the experiment and why we were somewhat surprised that the very high reward level resulted in lower performance on all our tasks. We had certainly expected this to be the case for the more cognitive tasks such as the Simon and Recall Last Three Numbers games, but we hadn't expected the effect to be just as pronounced for the tasks that were more mechanical in nature, such as the Dart Ball and Roll-up games. How could this be? One possibility was that our intuition about mechanical tasks was wrong and that, even for those kinds of tasks, very high incentives can be counterproductive. Another possibility was that the tasks that we considered as having a low cognitive component (Dart Ball and Roll-up) still required some mental skill and we needed to include purely mechanical tasks in the experiment.

With these questions in mind, we next set out to see what would happen if we took one task that required some cognitive skills (in the form of simple math problems) and compared it to a task that was based on pure effort (quickly clicking

on two keyboard keys). Working with MIT students, we wanted to examine the relationship between bonus size and performance when the task was purely mechanical, as opposed to a task that required some mental ability. Given my limited research budget, we could not offer the students the same range of bonuses we had offered in India. So we waited until the end of the semester, when the students were relatively broke, and offered them a bonus of $660—enough money to host a few parties—for a task that would take about twenty minutes.

Our experimental design had four parts, and each participant took part in all four of them (this setup is what social scientists call a within-participant design). We asked the students to perform the cognitive task (simple math problems) twice: once with the promise of a low bonus and once with the promise of a high bonus. We also asked them to perform the mechanical task (clicking on a keyboard) twice: once with the promise of a low bonus and once with the promise of a high bonus.

What did this experiment teach us? As you might expect, we saw a difference between the effects of large incentives on the two types of tasks. When the job at hand involved only clicking two keys on a keyboard, higher bonuses led to higher performance. However, once the task required even some rudimentary cognitive skills (in the form of simple math problems), the higher incentives led to a negative effect on performance, just as we had seen in the experiment in India.

The conclusion was clear: paying people high bonuses can result in high performance when it comes to simple mechanical tasks, but the opposite can happen when you ask them to use their brains—which is usually what companies try to do when they pay executives very high bonuses. If senior vice presidents were paid to lay bricks, motivating them through high bonuses would make sense. But people who receive bonus-based incentives for thinking about mergers and acquisitions or coming up with complicated financial instruments could be far less effective than we tend to think—and there may even be negative consequences to really large bonuses.

To summarize, using money to motivate people can be a double-edged sword. For tasks that require cognitive ability, low to moderate performance-based incentives can help. But when the incentive level is very high, it can command too much attention and thereby distract the person's mind with thoughts about the reward. This can create stress and ultimately reduce the level of performance.

AT THIS POINT, a rational economist might argue that the experimental results don't really apply to executive compensation. He might say something like "Well, in the real world, overpaying would never be an issue because employers and compensation boards would take lowered performance into account and never offer bonuses that could make motivation inefficient. After all," the rational economist might claim, "employers are perfectly rational. They know which incentives help employees perform better and which incentives don't."*

This is a perfectly reasonable argument. Indeed, it is possible that people intuitively understand the negative consequence of high bonuses and would therefore never offer them. On the other hand, much like many of our other irrationalities, it is also possible that we don't exactly understand how different forces, including financial bonuses, influence us.

In order to try to find out what intuitions people have about high bonuses, we described the India experiment in detail to a large group of MBA students at

Stanford University and asked them to predict the performance in the small-, medium-, and very-large-bonus conditions. Without knowing our results, our "postdictors" (that is, predictors after the fact) expected that the level of performance would increase with the level of payment—mispredicting the effects of the very high bonuses on performance.

These results suggested that the negative effect of high bonuses is not something that people naturally intuit. It also suggests that compensation is an area in which we need to employ stringent empirical investigation, rather than rely on intuitive reasoning. But would companies and boards of directors abandon their own intuitions when it comes to setting salaries and use empirical data instead? I doubt it. In fact, whenever I have a chance to present some of our findings to high-ranking executives, I am continually surprised by how little they know or think about the efficacy of their compensation schemes and how little interest they have in figuring out how to improve them.*

What about Those "Special People"?

A few years ago, before the financial crisis of 2008, I was invited to give a talk to a select group of bankers. The meeting took place in a well-appointed conference room at a large investment company's office in New York City. The food and wine were delicious and the views from the windows spectacular. I told the audience about different projects I was working on, including the experiments on high bonuses in India and MIT. They all nodded their heads in agreement with the theory that high bonuses might backfire—until I suggested that the same psychological effects might also apply to the people in the room. They were clearly offended by the suggestion. The idea that their bonuses could negatively influence their work performance was preposterous, they claimed.

I tried another approach and asked for a volunteer from the audience to describe how the work atmosphere at his firm changes at the end of the year. "During November and December," the fellow said, "very little work gets done. People mostly think about their bonuses and about what they will be able to afford." In response, I asked the audience to try on the idea that the focus on their upcoming bonuses might have a negative effect on their performance, but they refused to see my point. Maybe it was the alcohol, but I suspect that those folks simply didn't want to acknowledge the possibility that their bonuses were vastly oversized. (As the prolific author and journalist Upton Sinclair once noted, "It is difficult to get a man to understand something when his salary depends upon his not understanding it.")

Somewhat unsurprisingly, when presented with the results of these experiments, the bankers also maintained that they were, apparently, superspecial individuals; unlike most people, they insisted, they work better under stress. It didn't seem to me that they were really so different from other people, but I conceded that perhaps they were right. I invited them to come to the lab so that we could run an experiment to find out for sure. But, given how busy bankers are and the size of their paychecks, it was impossible to tempt them to take part in our experiments or to offer them a bonus that would have been large enough to be meaningful for them.

Without the ability to test bankers, Racheli Barkan (a professor at Ben-Gurion

University in Israel) and I looked for another source of data that could help us understand how highly paid, highly specialized professionals perform under great pressure. I know nothing about basketball, but Racheli is an expert, and she suggested that we look at clutch players—the basketball heroes who sink a basket just as the buzzer sounds. Clutch players are paid much more than other players, and are presumed to perform especially brilliantly during the last few minutes or seconds of a game, when stress and pressure are highest.

With the help of Duke University men's basketball Coach Mike Krzyzewski ("Coach K"), we got a group of professional coaches to identify clutch players in the NBA (the coaches agreed, to a large extent, about who is and who is not a clutch player). Next, we watched videos of the twenty most crucial games for each clutch player in an entire NBA season (by most crucial, we meant that the score difference at the end of the game did not exceed three points). For each of those games, we measured how many points the clutch players had shot in the last five minutes of the first half of each game, when pressure was relatively low. Then we compared that number to the number of points scored during the last five minutes of the game, when the outcome was hanging by a thread and stress was at its peak. We also noted the same measures for all the other "nonclutch" players who were playing in the same games.

We found that the nonclutch players scored more or less the same in the low-stress and high-stress moments, whereas there was actually a substantial improvement for clutch players during the last five minutes of the games. So far it looked good for the clutch players and, by analogy, the bankers, as it seemed that some highly qualified people could, in fact, perform better under pressure.

But—and I'm sure you expected a "but"—there are two ways to gain more points in the last five minutes of the game. An NBA clutch player can either improve his percentage success (which would indicate a sharpening of performance) or shoot more often with the same percentage (which suggests no improvement in skill but rather a change in the number of attempts). So we looked separately at whether the clutch players actually shot better or just more often. As it turned out, the clutch players did not improve their skill; they just tried many more times. Their field goal percentage did not increase in the last five minutes (meaning that their shots were no more accurate); neither was it the case that nonclutch players got worse.

At this point you probably think that clutch players are guarded more heavily during the end of the game and this is why they don't show the expected increase in performance. To see if this were indeed the case, we counted how many times they were fouled and also looked at their free throws. We found the same pattern: the heavily guarded clutch players were fouled more and got to shoot from the free-throw line more frequently, but their scoring percentage was unchanged. Certainly, clutch players are very good players, but our analysis showed that, contrary to common belief, their performance doesn't improve in the last, most important part of the game.

Obviously, NBA players are not bankers. The NBA is much more selective than the financial industry; very few people are sufficiently skilled to play professional basketball, while many, many people work as professional bankers. As we've seen, it's also easier to get positive returns from high incentives when we're talking about physical rather than cognitive skills. NBA players use both, but playing

basketball is more of a physical than a mental activity (at least relative to banking). So it would be far more challenging for the bankers to demonstrate "clutch" abilities when the task is less physical and demands more gray matter. Also, since the basketball players don't actually improve under pressure, it's even more unlikely that bankers would be able to perform to a higher degree when they are under the gun.

A CALL FOR LOWER BONUSES

One congressman publicly questioned the ethics of very large bonuses when he addressed the annual awards dinner of the trade newspaper *American Banker* at the New York Palace Hotel in 2004. Representative Barney Frank of Massachusetts, who, at the time, was the senior Democrat on the House Financial Services Committee (he's currently the chairman) and hardly your run-of-the-mill, flattering "Thank you all so much for inviting me" speaker, began with a question: "At the level of pay that those of you who run banks get, why the hell do you need bonuses to do the right thing?" He was answered by an abyss of silence. So he went on: "Do we really have to bribe you to do your jobs? I don't get it. Think what you are telling the average worker—that you, who are the most important people in the system and at the top, your salary isn't enough, you need to be given an extra incentive to do your jobs right."

As you may have guessed, two things happened, or rather did not happen, after this speech. First, no one answered his questions; second, no standing ovation was given. But Frank's point is important. After all, bonuses are paid with shareholders' money, and the effectiveness of those expensive payment schemes is not all that clear.

Public Speaking 101

The truth is that all of us, at various times, struggle and even fail when we perform tasks that matter to us the most. Consider your performance on standardized tests such as the SAT. What was the difference between your score on the practice tests and your score on the real SAT? If you are like most people, the result on your practice tests was most likely higher, suggesting that the pressure of wanting to perform well led you to a lower score.

The same principle applies to public speaking. When preparing to give a speech, most people do just fine when they practice their talk in the privacy of their offices. But when it's time to stand up in front of a crowd, things don't always go according to plan. The hypermotivation to impress others can cause us to stumble. It's no coincidence that glossophobia (the fear of public speaking) is right up there with arachnophobia (fear of spiders) on the scary scale.

As a professor, I have had a lot of personal experience with this particular form of overmotivation. Early in my academic career, public speaking was difficult for me. During one early presentation at a professional conference in front of many of my professors, I shook so badly that every time I used the laser pointer to emphasize a particular line on a projected slide, it raced all over the large screen and created a very interesting light show. Of course, that just made the problem worse and, as a result, I learned to make do without a laser pointer. Over time and with a lot of experience, I became better at public speaking, and my performance doesn't suffer as much these days.

Despite years of relatively problem-free public speaking, I recently had an

experience where the social pressure was so high that I flubbed a talk at a large conference in front of many of my colleagues. During one session at a conference in Florida, three colleagues and I were going to present our recent work on adaptation, the process through which people become accustomed to new circumstances (you'll read more about this phenomenon in chapter 6, "On Adaptation"). I had carried out some studies in this area, but instead of talking about my research findings, I planned to give a fifteen-minute talk about my personal experience in adapting to my physical injuries and present some of the lessons I had learned. I practiced this talk a few times, so I knew what I was going to say. Aside from the fact that the topic was more personal than is usual in an academic presentation, I did not feel that the talk was that much different from others I have given over the years. As it turned out, the plan did not match the reality in the slightest.

I started the lecture very calmly by describing my talk's objective, but, to my horror, the moment I started describing my experience in the hospital, I teared up. Then I found myself unable to speak. Avoiding eye contact with the audience, I tried to compose myself as I walked from one side of the room to the other for a minute or so. I tried again but I could not talk. After some more pacing and another attempt to talk, I was still unable to talk without crying.

It was clear to me that the presence of the audience had amplified my emotional memory. So I decided to switch to an impersonal discussion of my research. That approach worked fine, and I finished my presentation. But it left me with a very strong impression about my own inability to predict the effects of my own emotions, when combined with stress, on my ability to perform.

WITH MY PUBLIC failure in mind, Nina, Uri, George, and I created yet another version of our experiments. This time, we wanted to see what would happen when we injected an element of social pressure into the experimental mix.

In each session of this experiment, we presented eight students at the University of Chicago with thirteen sets of three anagrams, and paid them for each of the anagrams they solved. As an example, try to rearrange the letters of the following meaningless words to form meaningful ones (do this before you look at the footnote*):

1. SUHOE

Your solution: _____

2. TAUDI

Your solution: _____

3. GANMAAR
Your solution: _____

In eight of the thirteen trials, participants solved their anagrams working alone in private cubicles. In the other five trials, they were instructed to stand up, walk to the front of the room, and try to solve the anagrams on a large blackboard in

plain view of the other participants. In these public trials, performing well on the anagrams was more important, since the participants would not only receive the payment for their performance (as in the private trials) but would also stand to reap some social rewards in the form of the admiration of their peers (or be humiliated if they failed in front of everyone). Would they solve more anagrams in public—when their performance mattered more—or in private, when there was no social motivation to do well? As you've probably guessed, the participants solved about twice as many anagrams in private as in public.

THE PSYCHOANALYST AND concentration camp survivor Viktor Frankl described a related example of choking under social pressure. In *Man's Search for Meaning*, Frankl wrote about a patient with a persistent stutter who, try as he might, could not rid himself of it. In fact, the only time the poor fellow had been free of his speech problem was once when he was twelve years old. In that instance, the conductor of a streetcar had caught the boy riding without a ticket. Hoping the conductor would pity him for his stutter and let him off, the boy *tried* to stutter—but since he did not have any incentive to speak without stuttering, he was unable to do it! In a related example, Frankl describes a patient with a fear of perspiring: "Whenever he expected an outbreak of perspiration, this anticipatory anxiety was enough to precipitate excessive sweating." In other words, the patient's high social motivation to be sweat-free ironically led to more perspiration or, in economic terms, to lower performance.

In case you're wondering, choking under social pressure is not limited to humans. A variety of our animal friends have been put to similar tests, including no one's favorite—the cockroach—who starred in one particularly interesting study. In 1969, Robert Zajonc, Alexander Heingartner, and Edward Herman wanted to compare the speed at which roaches would accomplish different tasks under two conditions. In one, they were alone and without any company. In the other, they had an audience in the form of a fellow roach. In the "social" case, the other roach watched the runner through a Plexiglas window that allowed the two creatures to see and smell each other but that did not allow any direct contact.

One task that the cockroaches performed was relatively easy: the roach had to run down a straight corridor. The other, more difficult task required the roach to navigate a somewhat complex maze. As you might expect (assuming you have expectations about roaches), the insects performed the simpler runway task much more quickly when another roach was observing them. The presence of another roach increased their motivation, and, as a consequence, they did better. However, in the more complex maze task, they struggled to navigate their way in the presence of an audience and did much worse than when they performed the same complex task alone. So much for the benefits of social pressure.

I don't suppose that the knowledge of shared performance anxiety will endear roaches to you, but it does demonstrate the general ways in which high motivation to perform well can backfire (and it may also point to some important similarities between humans and roaches). As it turns out, overmotivation to perform well can stem from electrical shocks, from high payments, or from social pressures, and in all these cases humans and nonhumans alike seem to perform worse when it is in their best interest to truly outdo themselves.

Where Do We Go from Here?

These findings make it clear that figuring out the optimal level of rewards and incentives is not easy. I do believe that the inverse-U relationship originally suggested by Yerkes and Dodson generally holds, but obviously there are additional forces that could make a difference in performance. These include the characteristics of the task (how easy or difficult it is), the characteristics of the individual (how easily they become stressed), and characteristics related to the individual's experience with the task (how much practice a person has had with this task and how much effort they need to put into it). Either way, we know two things: it's difficult to create the optimal incentive structure for people, and higher incentives don't always lead to the highest performance.

I want to be clear that these findings don't mean that we should stop paying people for their work and contributions. But they do mean that the way we pay people can have powerful unintended consequences. When corporate HR departments design compensation plans, they usually have two goals: to attract the right people for the job and to motivate them to do the best they can. There is no question that these two objectives are important and that salaries (in addition to benefits, pride, and meaning—topics that we will cover in the next few chapters) can play an important role in fulfilling these goals. The problem is with the *types* of compensations people receive. Some, such as very high bonuses, can create stress because they cause people to overfocus on the compensation, while reducing their performance.

To try to get a feeling for how a high salary might change your behavior and influence your performance, imagine the following thought experiment: What if I paid you a lot of money, say $100,000, to come up with a very creative idea for a research project in the next seventy-two hours? What would you do differently? You would probably substitute some of your regular activities with others. You would not bother with your e-mail; you wouldn't check Facebook; you wouldn't leaf through a magazine. You would probably drink a lot of coffee and sleep much less. Maybe you would stay at the office all night (as I do from time to time). This means that you would work more hours, but would doing any of this help you be more creative?

Hours spent working aside, let's consider how your thought process would change during those critical seventy-two hours. What would you do to make yourself more creative and productive? Would you close your eyes harder? Would you visualize a mountaintop? Bite your lips to a larger degree? Breathe deeply? Meditate? Would you be able to chase away random thoughts more easily? Would you type faster? Think more deeply? Would you do any of those things and would they really lead you to a higher level of performance?

This is just a thought experiment, but I hope it illustrates the idea that though a large amount of money would most likely get you to work many hours (which is why high payment is very useful as an incentive when simple mechanical tasks are involved), it is unlikely to improve your creativity. It might, in fact, backfire, because financial incentives don't operate in a simple way on the quality of output from our brains. Nor is it at all clear how much of our mental activity is really under our direct control, especially when we are under the gun and really want to do our best.

NOW LET'S IMAGINE that you need a critical, lifesaving surgery. Do you think that offering your medical team a sky-high bonus would really result in improved performance? Would you want your surgeon and anesthesiologist to think, during the operation, about how they might use the bonus to buy a sailboat? That would clearly motivate them to get the bonus, but would it get them to perform better? Wouldn't you rather they devoted all of their mental energy to the task at hand? How much more effective might your doctors be in what the psychologist Mihály Csíkszentmihályi called a "state of flow"—when they are fully engaged and focused on the task at hand and oblivious to anything else? I'm not sure about you, but for important tasks that require thinking, concentration, and cognitive skill, I would take a doctor who's in a flow state any day.

A Few Words about Small and Large Decisions

For the most part, researchers like me carry out laboratory-based experiments. Most of these involve simple decisions, short periods of time, and relatively low stakes. Because traditional economists usually do not like the answers that our lab experiments produce, they often complain that our results do not apply to the real world. "Everything would change," they say, "if the decisions were important, the stakes were higher, and people tried harder." But to me, that's like saying that people always get the best care in the emergency room because the decisions made there are often literally life and death. (I doubt many people would argue that this is the case.) Absent empirical evidence one way or the other, such criticism of laboratory experiments is perfectly reasonable. It is useful to have some healthy skepticism about any results, including those generated in relatively simple lab experiments. Nevertheless, it is not clear to me why the psychological mechanisms that underlie our simple decisions and behaviors would not be the same ones that underlie more complex and important ones.

CARING AS A DOUBLE-EDGED SWORD

First Knight, a movie that came out in 1995 starring Sean Connery and Richard Gere, demonstrates one extreme way of dealing with the way motivation affects performance. Richard Gere's character, Sir Lancelot, is a vagabond expert swordsman who duels to pay the bills. Toward the beginning of the film, he sets up a kind of mini sparring clinic where the villagers pay to test their skills against him while he dispenses witty advice for their improvement. At one point, Lancelot suggests that someone out there must be better than he, and wouldn't that person love to win the gold pieces he happens to have clinking around in a bag?

Finally, an enormous blond man named Mark challenges him. They fight furiously for a brief time. Then, of course, Lancelot disarms Mark. The latter, confused, asks Lancelot how he managed to disarm him and whether it was a trick. Lancelot smilingly says that that's just how he fights, no trick to it. (Well, there is one mental trick, as we discover later.) When Mark asks Lancelot to teach him, Lancelot pauses for a moment before giving his lesson. He offers Mark three tips: first, to observe the man he's fighting and learn how he moves and thinks; second, to await the make-or-break moment in the match and go for it then. Up to that point, Mark smiles and nods happily, sure he can learn to do those things. Lancelot's final tip, however, is a little more difficult to follow. He tells his eager student that he can't care about living or

dying. Mark stares into his face, astonished; Lancelot smiles sadly and walks off into the sunset like a medieval cowboy.

Judging from this advice, it seems that Lancelot fights better than anyone else because he has found a way to bring the stress of the situation to zero. If he doesn't care whether he lives or dies, nothing rides on his performance. He doesn't worry about living past the end of the fight, so nothing clouds his mind and affects his abilities—he is pure concentration and skill.

Seen from this perspective, the findings presented in this chapter suggest that our tendency to behave irrationally and in ways that are undesirable might increase when the decisions are more important. In our India experiment, the participants behaved very much as standard economics would predict when the incentives were relatively low. But they did not behave as standard economics would predict when it really mattered and the incentives were highest.

COULD ALL THIS mean that sometimes we might actually behave *less* rationally when we try harder? If that's so, what is the correct way to pay people without overstressing them? One simple solution is to keep bonuses low—something those bankers I met with might not appreciate. Another approach might be to pay employees on a straight salary basis. Though it would eliminate the consequences of overmotivation, it would also eradicate some of the benefits of performance-based payment. A better approach might be to keep the motivating element of performance-based payment but eliminate some of the nonproductive stress it creates. To achieve this, we could, for example, offer employees smaller and more frequent bonuses. Another approach might be to offer employees a performance-based payment that is averaged over time—say, the previous five years, rather than only the last year. This way, employees in their fifth year would know 80 percent of their bonus in advance (based on the previous four years), and the immediate effect of the present year's performance would matter less.

Whatever approach we take to optimize performance, it should be clear that we need a better understanding of the links between compensation, motivation, stress, and performance. And we need to take our peculiarities and irrationalities into account.

P.S. I WOULD like to dedicate this chapter to my banker friends, who repeatedly "enjoy" hearing my opinion about their salaries and are nevertheless still willing to talk to me.

Chapter 2
The Meaning of Labor

What Legos Can Teach Us about the Joy of Work

On a recent flight from California, I was seated next to a professional-looking man in his thirties. He smiled as I settled in, and we exchanged the usual complaints about shrinking seat sizes and other discomforts. We both checked our e-mail before shutting down our iPhones. Once we were airborne, we got to chatting. The conversation went like this:

He: So how do you like your iPhone?
Me: I love it in many ways, but now I check my e-mail all the time, even when I am at traffic lights and in elevators.
He: Yeah, I know what you mean. I spend much more time on e-mail since I got it.
Me: I'm not sure if all these technologies make me more productive, or less.
He: What kind of work do you do?

Whenever I'm on a plane and start chatting with the people sitting next to me, they often ask or tell me what they do for a living long before we exchange names or other details about our lives. Maybe it's a phenomenon more common in America than in other places, but I've observed that fellow travelers everywhere—at least the ones who make conversation—often discuss what they do for a living before talking about their hobbies, family, or political ideology.

The man sitting next to me told me all about his work as a sales manager for SAP, a large business management software firm that many companies use to run their back-office systems. (I knew something about the technology because my poor, suffering assistant at MIT was forced to use it when the university switched to SAP.) I wasn't terribly interested in talking about the challenges and benefits of accounting software, but I was taken by my seatmate's enthusiasm. He seemed to really like his job. I sensed that his work was the core of his identity—more important to him, perhaps, than many other things in his life.

On an intuitive level, most of us understand the deep interconnection between identity and labor. Children think of their potential future occupations in terms of what they will be (firemen, teachers, doctors, behavioral economists, or what have you), not about the amount of money they will earn. Among adult Americans, "What do you do?" has become as common a component of an introduction as the anachronistic "How do you do?" once was—suggesting that our jobs are an integral part of our identity, not merely a way to make money in order to keep a roof over our heads and food in our mouths. It seems that many people find pride

and meaning in their jobs.

In contrast to this labor-identity connection, the basic economic model of labor generally treats working men and women as rats in a maze: work is assumed to be annoying, and all the rat (person) wants to do is to get to the food with as little effort as possible and to rest on a full belly for the most time possible. But if work also gives us meaning, what does this tell us about why people want to work? And what about the connections among motivation, personal meaning, and productivity?

Sucking the Meaning out of Work

In 2005, I was sitting in my office at MIT, working on yet another review,* when I heard a knock at the door. I looked up and saw a familiar, slightly chubby face belonging to a young man with brown hair and a funny goatee. I was sure I knew him, but I couldn't place him. I did the proper thing and invited him in. A moment later I realized that he was David, a thoughtful and insightful student who had taken my class a few years earlier. I was delighted to see him.

Once we were settled in with coffee, I asked David what had brought him back to MIT. "I'm here to do some recruiting," he said. "We're looking for new blood." David went on to tell me what he'd been up to since graduating a few years earlier. He'd landed an exciting job in a New York investment bank. He was making a high salary and enjoying fantastic benefits—including having his laundry done—and loved living in the teeming city. He was dating a woman who, from his description, seemed to be a blend of Wonder Woman and Martha Stewart, though admittedly they had been together for only two weeks.

"I also wanted to tell you something," he said. "A few weeks ago, I had an experience that made me think back to our behavioral economics class."

He told me that earlier that year he'd spent ten weeks on a presentation for a forthcoming merger. He had worked very hard on analyzing data, making beautiful plots and projections, and he had often stayed in the office past midnight polishing his PowerPoint presentation (what did bankers and consultants do before PowerPoint?). He was delighted with the outcome and happily e-mailed the presentation to his boss, who was going to make the presentation at the all-important merger meeting. (David was too low in the hierarchy to actually attend the meeting.)

His boss e-mailed him back a few hours later: "Sorry, David, but just yesterday we learned that the deal is off. I did look at your presentation, and it is an impressive and fine piece of work. Well done." David realized that his presentation would never see the light of day but that this was nothing personal. He understood that his work shone, because his boss was not the kind of person who gave undeserved compliments. Yet, despite the commendation, he was distraught with the outcome. The fact that all his effort had served no ultimate purpose created a deep rift between him and his job. All of a sudden he didn't care as much about the project in which he had invested so many hours. He also found that he didn't care as much about other projects he was working on either. In fact, this "work to no end" experience seemed to have colored David's overall approach to his job and his attitude toward the bank. He'd quickly gone from feeling useful and happy in his work to feeling dissatisfied and that his efforts were futile.

“You know what’s strange?” David added. “I worked hard, produced a high-quality presentation, and my boss was clearly happy with me and my work. I am sure that I will get very positive reviews for my efforts on this project and probably a raise at the end of the year. So, from a functional point of view, I should be happy. At the same time, I can’t shake the feeling that my work has no meaning. What if the project I’m working on now gets canceled the day before it’s due and my work is deleted again without ever being used?”

Then he offered me the following thought experiment. “Imagine,” he said in a low, sad voice, “that you work for some company and your task is to create PowerPoint slides. Every time you finish, someone takes the slides you’ve just made and deletes them. As you do this, you get paid well and enjoy great fringe benefits. There is even someone who does your laundry. How happy would you be to work in such a place?”

I felt sorry for David, and in an attempt to comfort him, I told him a story about my friend Devra, who worked as an editor at one of the major university presses. She had recently finished editing a history book—work she had enjoyed doing and for which she had been paid. Three weeks after she submitted the final manuscript to the publishing house, the head editor decided not to print it. As was the case with David, everything was fine from a functional point of view, but the fact that no readers would ever hold the book in their hands made her regret the time and care she had put into editing it. I was hoping to show David that he was not alone. After a minute of silence he said, “You know what? I think there might be a bigger issue around this. Something about useless or unrequited work. You should study it.”

It was a great idea, and in a moment, I’ll tell you what I did with it. But before we do that, let’s take a detour into the worlds of a parrot, a rat, and contrafreeloading.

Will Work for Food

When I was sixteen, I joined the Israeli Civil Guard. I learned to shoot a World War II–era Russian carbine rifle, set up roadblocks, and perform other useful tasks in case the adult men were at war and we youth were left to protect the home front. As it turned out, the main benefit of learning how to shoot was that from time to time it excused me from school. In those years in Israel, every time a high school class went on a trip, a student who knew how to use a rifle was asked to join it as a guard. Since this duty also meant substituting a few days of classes with hiking and enjoying the countryside, I was always willing to volunteer, even if I had to give up an exam for the call of duty.*

On one of these trips I met a girl, and by the end of the trip I had a crush on her. Unfortunately, she was one class behind me in school and our schedules did not coincide, making it difficult for me to see her and learn whether she felt the same about me. So I did what any moderately resourceful teenager would do: I discovered an extracurricular interest of hers and made it mine as well.

About a mile from our town lived a guy we called “Birdman” who had endured a miserable and lonely childhood in Eastern Europe during the Holocaust. Hiding from the Nazis in the forest, he found much comfort in the animals and birds around him. After he eventually made it to Israel, he decided to try to make the

childhood of the kids around him much better than his, so he collected birds from all over the globe and invited children to come and experience the wonders of the avian world. The girl I liked used to volunteer in the Birdman's aviary, and so I joined her in cleaning cages, feeding the birds, telling visitors stories about them, and—most amazingly—watching the birds hatch, grow, and interact with one another and the visitors. After a few months, it became clear that the girl and I had no future but the birds and I did, so I continued to volunteer for a while.

Some years later, after my main hospitalization period, I decided to get a parrot. I selected a relatively large, highly intelligent Mealy Amazon parrot and named her Jean Paul. (For some reason, I decided that female parrots should have French male names.) She was a handsome bird; her feathers were mostly green with some light blue, yellow, and red at the tips of her wings, and we had lots of fun together. Jean Paul loved talking and flirting with nearly everyone who happened by her cage. She would come near me to be petted any time I passed her cage, bowing her head very low and exposing the back of her neck, and I would try to produce baby talk as I ruffled the feathers on her neck. Whenever I took a shower, she would perch in the bathroom and twitch happily when I splashed water drops at her.

Jean Paul was intensely social. Left alone in her cage for too long, she would pluck at her own feathers, something she did when she was bored. As I discovered, parrots have a particularly acute need to engage in mental activity, so I invested in several toys specifically designed to preclude parrot boredom. One such puzzle, called SeekaTreat, was a stack of multicolored wooden tiers of decreasing size that form a kind of pyramid. Made of wood, the tiers were connected through the center with a cord. Within each tier, there were half-inch-deep "treat wells" designed to hold tasty parrot treats. To get at the food, Jean Paul had to lift each tier and uncover the treat, which was not very easy to do. Over the years, the SeekaTreat and other toys like it kept Jean Paul happy, curious, and interested in her environment.

THOUGH I DIDN'T know it at the time, there was an important concept behind the SeekaTreat. "Contrafreeloading," a term coined by the animal psychologist Glen Jensen, refers to the finding that many animals prefer to *earn* food rather than simply eating identical but freely accessible food.

To better understand the joy of working for food, let's go back to the 1960s when Jensen first took adult male albino rats and tested their appetite for labor. Imagine that you are a rat participating in Jensen's study. You and your little rodent friends start out living an average life in an average cluster of cages, and every day, for ten days, a nice man in a white lab coat gives you 10 grams of finely ground Purina lab crackers precisely at noon (you don't know it's noon, but you eventually pick up on the general time). After a few days of this pattern, you learn to expect food at noon every day, and your rat tummy begins rumbling right before the nice man shows up—exactly the state Jensen wants you in.

Once your body is conditioned to eating crackers at noon, things suddenly change. Instead of feeding you at the time of your maximal hunger, you have to wait another hour, and at one o'clock, the man picks you up and puts you in a well-lit "Skinner box." You are ravenous. Named after its original designer, the influential psychologist B. F. Skinner, this box is a regular cage (similar to the one you are used to), but it has two features that are new to you. The first is an

automated food dispenser that releases food pellets every thirty seconds. Yum! The second is a bar that for some reason is covered with a tin shield.

At first, the bar isn't very interesting, but the food dispenser is, and that is where you spend your time. The food dispenser releases food pellets every so often for twenty-five minutes, until you have eaten fifty food pellets. At that point you are taken back to your cage and given the rest of your food for the day.

The next day, your lunch hour passes by again without food, and at 1:00 P.M. you are placed back into the Skinner box. You're ravenous but unhappy because this time the food dispenser doesn't release any pellets. What to do? You wander around the cage, and, passing the bar, you realize that the tin shield is missing. You accidentally press the bar, and immediately a pellet of food is released. Wonderful! You press the bar again. Oh joy!—another pellet comes out. You press again and again, eating happily, but then the light goes off, and at the same time, the bar stops releasing food pellets. You soon learn that when the light is off, no matter how much you press the bar, you don't get any food.

Just then the man in the lab coat opens the top of the cage and places a tin cup in a corner of the cage. (You don't know it, but the cup is full of pellets.) You don't pay attention to the cup; you just want the bar to start producing food again. You press and press, but nothing happens. As long as the light is off, pressing the bar does you no good. You wander around the cage, cursing under your rat breath, and go over to the tin cup. "Oh my!" you say to yourself. "It's full of pellets! Free food!" You begin chomping away, and then suddenly the light comes on again. Now you realize that you have two possible food sources. You can keep on eating the free food from the tin cup, or you can go back to the bar and press it for food pellets. If you were this rat, what would you do?

Assuming you were like all but one of the two hundred rats in Jensen's study, you would decide not to feast entirely from the tin cup. Sooner or later, you would return to the bar and press it for food. And if you were like 44 percent of the rats, you would press the bar quite often—enough to feed you more than half your pellets. What's more, once you started pressing the bar, you would not return so easily to the cup with the abundant free food.

Jensen discovered (and many subsequent experiments confirmed) that many animals—including fish, birds, gerbils, rats, mice, monkeys, and chimpanzees—tend to prefer a longer, more indirect route to food than a shorter, more direct one.* That is, as long as fish, birds, gerbils, rats, mice, monkeys, and chimpanzees don't have to work too hard, they frequently prefer to earn their food. In fact, among all the animals tested so far the only species that prefers the lazy route is—you guessed it—the commendably rational cat.

This brings us back to Jean Paul. If she were an economically rational bird and interested only in expending as little effort as possible to get her food, she would simply have eaten from the tray in her cage and ignored the SeekaTreat. Instead, she played with her SeekaTreat (and other toys) for hours because it provided her with a more meaningful way to earn her food and spend her time. She was not merely existing but mastering something and, in a sense, "earning" her living.•*

THE GENERAL IDEA of contrafreeloading contradicts the simple economic view that organisms will always choose to maximize their reward while minimizing their effort. According to this standard economic view, spending anything, including

energy, is considered a cost, and it makes no sense that an organism would voluntarily do so. Why work when they can get the same food—maybe even more food—for free?

When I described contrafreeloading to one of my rational economist friends (yes, I still have some of these), he immediately explained to me how Jensen's results do not, in fact, contradict standard economic reasoning. He patiently told me why this research was irrelevant to questions of economics. "You see," he said, as one would to a child, "economic theory is about the behavior of people, not rats or parrots. Rats have very small brains and almost nonexistent neocortices,* so it is no wonder that these animals don't realize that they can get food for free. They are just confused."

"Anyway," he continued, "I am sure that if you were to repeat Jensen's experiment with normal people, you would not find this contrafreeloading effect. And I am a hundred percent positive that if you had used economists as your participants, you would not see anyone working unnecessarily!"

He had a valid point. And though I felt that it is possible to generalize about the way we relate to work from those animal studies, it was also clear to me that some experiments on adult human contrafreeloading were in the cards. (It was also clear that I should not do the experiment on economists.)

What do you think? Do humans, in general, exhibit contrafreeloading, or are they more rational? What about you?

"Small-M" Motivations

After David left my office, I started thinking about his and Devra's disappointments. The lack of an audience for their work had made a big difference in their motivation. What is it aside from a paycheck, I wondered, that confers meaning on work? Is it the small satisfaction of focused engagement? Is it that, like Jean Paul, we enjoy feeling challenged by whatever it is we're doing and satisfactorily completing a task (which creates a small level of meaning with a small m)? Or maybe we feel meaning only when we deal with something bigger. Perhaps we hope that someone else, especially someone important to us, will ascribe value to what we've produced? Maybe we need the illusion that our work might one day matter to many people. That it might be of some value in the big, broad world out there (we might call this Meaning with a large M)? Most likely it is all of these. But fundamentally, I think that almost any aspect of meaning (even small-m meaning) can be sufficient to drive our behavior. As long as we are doing something that is somewhat connected to our self-image, it can fuel our motivation and get us to work much harder.

Consider the work of writing, for example. Once upon a time, I wrote academic papers with an eye on promotion. But I also hoped—and still hope—that they might actually influence something in the world. How hard would I work on an academic paper if I knew for sure that only a few people would ever read it? What if I knew for sure that no one would ever read my work? Would I still do it?

I truly enjoy the research I do; I think it's fun. I'm excited to tell you, dear reader, about how I have spent the last twenty years of my life. I'm almost sure my mother will read this book,* and I'm hoping that at least a few others will as well. But what if I knew for sure that no one would ever read it? That Claire Wachtel,

my editor at HarperCollins, would decide to put this book in a drawer, pay me for it, and never publish it? Would I still be sitting here late at night working on this chapter? No way. Much of what I do in life, including writing my blog posts, articles, and these pages, is driven by ego motivations that link my effort to the meaning that I hope the readers of these words will find in them. Without an audience, I would have very little motivation to work as hard as I do.

BLOGGING FOR TREATS

Now think about blogging. The number of blogs out there is astounding, and it seems that almost everyone has a blog or is thinking about starting one. Why are blogs so popular? Not only is it because so many people have the desire to write; after all, people wrote before blogs were invented. It is also because blogs have two features that distinguish them from other forms of writing. First, they provide the hope or the illusion that someone else will read one's writing. After all, the moment a blogger presses the "publish" button, the blog can be consumed by anybody in the world, and with so many people connected, somebody, or at least a few people, should stumble upon the blog. Indeed, the "number of views" statistic is a highly motivating feature in the blogosphere because it lets the blogger know exactly how many people have at least seen the posting. Blogs also provide readers with the ability to leave their reactions and comments—gratifying for both the blogger, who now has a verifiable audience, and the reader-cum-writer. Most blogs have very low readership—perhaps only the blogger's mother or best friend reads them—but even writing for one person, compared to writing for nobody, seems to be enough to compel millions of people to blog.

Building Bionicles

A few weeks after my conversation with David, I met with Emir Kamenica (a professor at the University of Chicago), and Dražen Prelec (a professor at MIT) at a local coffee shop. After discussing a few different research topics, we decided to explore the effect of devaluation on motivation for work. We could have examined Large-M Meaning—that is, we could have measured the value that people who are developing a cure for cancer, helping the poor, building bridges, and otherwise saving the world every day place on their jobs. But instead, and maybe because the three of us are academics, we decided to set up experiments that would examine the effects of small-m meaning—effects that I suspect are more common in everyday life and in the workplace. We wanted to explore how small changes in the work of people like David the banker and Devra the editor affected their desire to work. And so we came up with an idea for an experiment that would test people's reactions to small reductions in meaning for a task that did not have much meaning to start with.

ONE FALL DAY in Boston, a tall mechanical engineering student named Joe entered the student union at Harvard University. He was all ambition and acne. On a crowded bulletin board boasting flyers about upcoming concerts, lectures, political events, and roommates wanted, he caught sight of a sign reading "Get paid to build Legos!"

As an aspiring engineer, Joe had always loved building things. Drawn to

anything that required assembling, Joe had naturally played with Legos throughout his childhood. When he was six years old, he had taken his father's computer apart, and a year later, he had disassembled the living room stereo system. By the time he was fifteen, his penchant for taking objects apart and putting them back together again had cost his family a small fortune. Fortunately, he had found an outlet for his passion in college, and now he had the opportunity to build with Legos to his heart's content—and get paid for it.

A few days later, at the agreed-upon time, Joe showed up to take part in our experiment. As luck would have it, he was assigned to the meaningful condition. Sean, the research assistant, greeted Joe as he entered the room, directed him to a chair, and explained the procedure to him. Sean showed Joe a Lego Bionicle—a small fighting robot—and then told Joe that his task would involve constructing this exact type of Bionicle, made up of forty pieces that had to be assembled in a precise way. Next, Sean told Joe the rules for payment. "The basic setup," he said, "is that you will get paid on a diminishing scale for each Bionicle you assemble. For the first Bionicle, you will receive two dollars. After you finish the first one, I will ask you if you want to build another one, this time for eleven cents less, which is a dollar eighty-nine. If you say that you want to build another one, I will hand you the next one. This same process will continue in the same way, and for each additional Bionicle you build, you will get eleven cents less, until you decide that you don't want to build any more Bionicles. At that point, you will receive the total amount of money for all the robots you've created. There is no time limit, and you can build Bionicles until the benefits you get no longer outweigh the costs."

Joe nodded, eager to get started. "And one last thing," Sean warned. "We use the same Bionicles for all of our participants, so at some point before the next participant shows up, I will have to disassemble all the Bionicles you build and place the parts back in their boxes for the next participant. Everything clear?"

Joe quickly opened the first box of plastic parts, scanned the assembly instructions, and began building his first Bionicle. He obviously enjoyed assembling the pieces and seeing the weird robotic form take shape. Once finished, he arranged the robot in a battle position and asked for the next one. Sean reminded him how much he would make for the next Bionicle ($1.89) and handed him the next box of pieces. Once Joe started working on the next Bionicle, Sean took the construction that Joe had just finished and placed it in a box below the desk where it was destined to be disassembled for the next participant.

Like a man on a mission, Joe continued building one Bionicle after another, while Sean continued storing them in the box below the table. After he'd finished assembling ten robots, Joe announced that he'd had his fill and collected his pay of $15.05. Before Joe took off, Sean asked him to answer a few questions about how much he liked Legos in general and how much he had enjoyed the task. Joe responded that he was a Lego fan, that he had really enjoyed the task, and that he would recommend it to his friends.

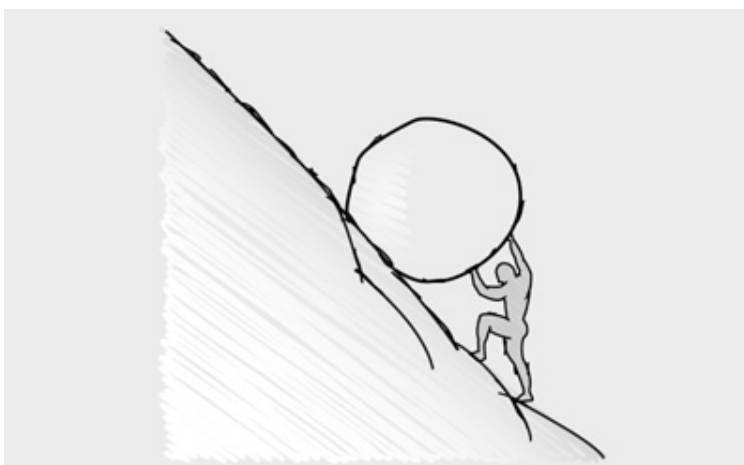
The next person in line turned out to be a young man named Chad, an exuberant—or perhaps overcaffeinated—premed student. Unlike Joe, Chad was assigned to a procedure that among ourselves we fondly called the "Sisyphean" condition. This was the condition we wanted to focus on.

THE MYTH OF SISYPHUS

We used the term "Sisyphean" as a tribute to the mythical king Sisyphus, who was punished by the gods for his avarice and trickery. Besides murdering travelers and guests, seducing his niece, and usurping his brother's throne, Sisyphus also tricked the gods.

Before he died, Sisyphus, knowing that he was headed to the Underworld, made his wife promise to refrain from offering the expected sacrifice following his death. Once he reached Hades, Sisyphus convinced kindhearted Persephone, the queen of the Underworld, to let him return to the upper world, so that he could ask his wife why she was neglecting her duty. Of course, Persephone had no idea that Sisyphus had intentionally asked his wife *not* to make the sacrifice, so she agreed, and Sisyphus escaped the Underworld, refusing to return. Eventually Sisyphus was captured and carried back, and the angry gods gave him his punishment: for the rest of eternity, he was forced to push a large rock up a steep hill, in itself a miserable task. Every time he neared the top of the hill, the rock would roll backward and he would have to start over.

Of course, our participants had done nothing deserving of punishment. We simply used the term to describe the condition that the less fortunate among them experienced.



Sean explained the terms and conditions of the study to Chad in exactly the same way he had to Joe. Chad grabbed the box, opened it, removed the Bionicle's assembly instruction sheet, and carefully looked it over, planning his strategy. First he separated the pieces into groups, in the order in which they would be needed. Then he began assembling the pieces, moving quickly from one to another. He went about the task cheerily, finished the first Bionicle in a few minutes, and handed it to Sean as instructed. "That's two dollars," Sean said. "Would you like to build another one for a dollar eighty-nine?" Chad nodded enthusiastically and started working on his second robot, using the same organized approach.

While Chad was putting together the first pieces of his next Bionicle (pay attention, because this is where the two conditions differed), Sean slowly disassembled the first Bionicle, piece by piece, and placed the pieces back into the

original box.

"Why are you taking it apart?" Chad asked, looking both puzzled and dismayed.

"This is just the procedure," Sean explained. "We need to take this one apart in case you want to build another Bionicle."

Chad returned his attention to the robot he was building, but his energy and excitement about building Bionicles was clearly diminished. When he finished his second construction, he paused. Should he build a third Bionicle or not? After a few seconds, he said he would build another one.

Sean handed Chad the original box (the one Chad had assembled and Sean had disassembled), and Chad got to work. This time, he worked somewhat faster, but he abandoned his strategy; perhaps he felt he no longer needed an organizational strategy, or maybe he felt that the extra step was unnecessary.

Meanwhile, Sean slowly took apart the second Bionicle Chad had just finished and placed the parts back into the second box. After Chad finished the third Bionicle, he looked it over and handed it to Sean. "That makes five sixty-seven," Sean said. "Would you like to make another?"

Chad checked his cell phone for the time and thought for a moment. "Okay," he said, "I'll make one more."

Sean handed him the second Bionicle for the second time, and Chad set about rebuilding it. (All the participants in his condition built and rebuilt the same two Bionicles until they decided to call it quits.) Chad managed to build both his Bionicles twice, for a total of four, for which he was paid $7.34.

After paying Chad, Sean asked him, as he did with all participants, whether he liked Legos and had enjoyed the task.

"Well, I like playing with Legos, but I wasn't wild about the experiment," Chad said with a shrug. He tucked the payment into his wallet and quickly left the room.

What did the results show? Joe and the other participants in the meaningful condition built an average of 10.6 Bionicles and received an average of $14.40 for their time. Even after they reached the point where their earnings for each Bionicle were less than a dollar (half of the initial payment), 65 percent of those in the meaningful condition kept on working. In contrast, those in the Sisyphean condition stopped working much sooner. On average, that group built 7.2 Bionicles (68 percent of the number built by the participants in the meaningful condition) and earned an average of $11.52. Only 20 percent of the participants in the Sisyphean condition constructed Bionicles when the payment was less than a dollar per robot.

In addition to comparing the number of Bionicles our participants constructed in the two conditions, we wanted to see how the individuals' liking of Legos influenced their persistence in the task. In general, you would expect that the more a participant loved playing with Legos, the more Bionicles he or she would complete. (We measured this by the size of the statistical correlation between these two numbers.) This was, indeed, the case. But it also turned out that the two conditions were very different in terms of the relationship between Legos-love and persistence in the task. In the meaningful condition the correlation was high, but it was practically zero in the Sisyphean condition.

What this analysis tells me is that if you take people who love something (after all, the students who took part in this experiment signed up for an experiment to build Legos) and you place them in meaningful working conditions, the joy they

derive from the activity is going to be a major driver in dictating their level of effort. However, if you take the same people with the same initial passion and desire and place them in meaningless working conditions, you can very easily kill any internal joy they might derive from the activity.

IMAGINE THAT YOU are a consultant visiting two Bionicles factories. The working conditions in the first Bionicles factory are very similar to those in the Sisyphean condition (which, sadly, is not very different from the structure of many workplaces). After observing the workers' behavior, you would most likely conclude that they don't like Legos much (or maybe they have something specific against Bionicles). You also observe their need for financial incentives to motivate them to continue working on their unpleasant task and how quickly they stop working once the payment drops below a certain level. When you deliver your PowerPoint presentation to the company's board, you remark that as the payment per production unit drops, the employees' willingness to work dramatically diminishes. From this you further conclude that if the factory wants to increase productivity, wages must be increased substantially.

Next, you visit the second Bionicles factory, which is structured more similarly to the meaningful condition. Now imagine how your conclusions about the onerous nature of the task, the joy of doing it, and the level of compensation needed to persist in the task, might be different.

We actually conducted a related consultant experiment by describing the two experimental conditions to our participants and asking them to estimate the difference in productivity between the two factories. They basically got it right, estimating that the total output in the meaningful condition would be higher than the output in the Sisyphean condition. But they were wrong in estimating the magnitude of the difference. They thought that those in the meaningful condition would make one or two more Bionicles, but, in fact, they made an average of 3.5 more. This result suggests that though we can recognize the effect of even small-m meaning on motivation, we dramatically underestimate its power.

In this light, let's think about the results of the Bionicles experiment in terms of real-life labor. Joe and Chad loved playing with Legos and were paid at the same rate. Both knew that their creations were only temporary. The only difference was that Joe could maintain the illusion that his work was meaningful and so continued to enjoy building his Bionicles. Chad, on the other hand, witnessed the piece-by-piece destruction of his work, forcing him to realize that his labor was meaningless.* All the participants most likely understood that the whole exercise was silly—after all, they were just making stuff from Legos, not designing a new dam, saving lives, or developing a new medication—but for those in Chad's condition, watching their creations being deconstructed in front of their eyes was hugely demotivating. It was enough to kill any joy they'd accrued from building the Bionicles in the first place. This conclusion seemed to tally with David's and Devra's stories; the translation of joy into willingness to work seems to depend to a large degree on how much meaning we can attribute to our own labor.

NOW THAT WE had ruined the childhood memories of half of our participants, it was time to try another approach to the same experiment. This time the experimental

setup was based more closely on David's experience. Once again, we set up a booth in the student center, but this time we tested three conditions and used a different task.

We created a sheet of paper with a random sequence of letters on it and asked the participants to find instances where the letter *S* was followed by another letter *S*. We told them that each sheet contained ten instances of consecutive *S*s and that they would have to find all ten instances in order to complete a sheet. We also told them about the payment scheme: they would be paid $0.55 for the first completed page, $0.50 for the second, and so on (for the twelfth page and thereafter, they would receive nothing).

In the first condition (which we called acknowledged), we asked the students to write their names on each sheet prior to starting the task and then to find the ten instances of consecutive *S*s. Once they finished a page, they handed it to the experimenter, who looked over the sheet from top to bottom, nodded in a positive way, and placed it upside down on top of a large pile of completed sheets. The instructions for the ignored condition were basically the same, but we didn't ask participants to write their names at the top of the sheet. After completing the task, they handed the sheet to the experimenter, who placed it on top of a high stack of papers without even a sidelong glance. In the third, ominously named shredded condition, we did something even more extreme. Once the participant handed in their sheet, instead of adding it to a stack of papers, the experimenter immediately fed the paper into a shredder, right before the participant's eyes, without even looking at it.

We were impressed by the difference a simple acknowledgment made. Based on the outcome of the Bionicles experiment, we expected the participants in the acknowledged condition to be the most productive. And indeed, they completed many more sheets of letters than their fellow participants in the shredded condition. When we looked at how many of the participants continued searching for letter pairs after they reached the pittance payment of 10 cents (which was also the tenth sheet), we found that about half (49 percent) of those in the acknowledged condition went on to complete ten sheets or more, whereas only 17 percent in the shredded condition completed ten sheets or more. Indeed, it appeared that finding pairs of letters can be either enjoyable and interesting (if your effort is acknowledged) or a pain (if your labor is shredded).

But what about the participants in the ignored condition? Their labor was not destroyed, but neither did they receive any form of feedback about their work. How many sheets would those individuals complete? Would their output be similar to that of the individuals in the acknowledged condition? Would they take the lack of reaction badly and produce an output similar to that of the individuals in the shredded condition? Or would the results of those in the ignored condition fall somewhere between the other two?

The results showed that participants in the acknowledged condition completed on average 9.03 sheets of letters; those in the shredded condition completed 6.34 sheets; and those in the ignored condition (drumroll, please) completed 6.77 sheets (and only 18 percent of them completed ten sheets or more). The amount of work produced in the ignored condition was much, much closer to the performance in the shredded condition than to that in the acknowledged condition.

THIS EXPERIMENT TAUGHT us that sucking the meaning out of work is surprisingly easy. If you're a manager who really wants to demotivate your employees, destroy their work in front of their eyes. Or, if you want to be a little subtler about it, just ignore them and their efforts. On the other hand, if you want to motivate people working with you and for you, it would be useful to pay attention to them, their effort, and the fruits of their labor.

There is one more way to think about the results of the finding pairs of letters experiment. The participants in the shredded condition quickly realized that they could cheat, because no one bothered to look at their work. In fact, if these participants were rational, upon realizing that their work was not checked, those in the shredded condition should have cheated, persisted in the task the longest, and made the most money. The fact that the acknowledged group worked longer and the shredded group worked the least further suggests that when it comes to labor, human motivation is complex. It can't be reduced to a simple "work for money" trade-off. Instead we should realize that the effect of meaning on labor, as well as the effect of eliminating meaning from labor, are more powerful than we usually expect.

The Division and Meaning of Labor

I found the consistency between the results of the two experiments, and the substantial impact of such small differences in meaning, rather startling. I was also taken aback by the almost complete lack of enjoyment that the participants in the Sisyphean condition derived from building Legos. As I reflected on the situations facing David, Devra, and others, my thoughts eventually lighted on my administrative assistant.

On paper, Jay had a simple enough job description: he was managing my research accounts, paying participants, ordering research supplies, and arranging my travel schedule. But the information technology that Jay had to use made his job a sort of Sisyphean task. The SAP accounting software he used daily required him to fill in numerous fields on the appropriate electronic forms, sending these e-forms to other people, who filled in a few more fields, who in turn sent the e-forms to someone else, who approved the expenses and subsequently passed them to yet another person, who actually settled the accounts. Not only was poor Jay doing only a small part of a relatively meaningless task, but he never had the satisfaction of seeing this work completed.

Why did the nice people at MIT and SAP design the system this way? Why did they break tasks into so many components, put each person in charge of only small parts, and never show them the overall progress or completion of their tasks? I suspect it all has to do with the ideas of efficiency brought to us by Adam Smith. As Smith argued in 1776 in *The Wealth of Nations*, division of labor is an incredibly effective way to achieve higher efficiency in the production process. Consider, for example, his observations of a pin factory:

> . . . the division of labour has been very often taken notice of, the trade of the pin-maker; a workman not educated to this business (which the division of labour has rendered a distinct trade), nor

> acquainted with the use of the machinery employed in it (to the invention of which the same division of labour has probably given occasion), could scarce, perhaps, with his utmost industry, make one pin in a day, and certainly could not make twenty. But in the way in which this business is now carried on, not only the whole work is a peculiar trade, but it is divided into a number of branches, of which the greater part are likewise peculiar trades. One man draws out the wire, another straights it, a third cuts it, a fourth points it, a fifth grinds it at the top for receiving the head; to make the head requires two or three distinct operations; to put it on, is a peculiar business, to whiten the pins is another; it is even a trade by itself to put them into the paper; and the important business of making a pin is, in this manner, divided into about eighteen distinct operations, which, in some manufactories, are all performed by distinct hands, though in others the same man will sometimes perform two or three of them. I have seen a small manufactory of this kind where ten men only were employed, and where some of them consequently performed two or three distinct operations. But though they were very poor, and therefore but indifferently accommodated with the necessary machinery, they could, when they exerted themselves, make among them about twelve pounds of pins in a day. There are in a pound upwards of four thousand pins of a middling size. Those ten persons, therefore, could make among them upwards of forty-eight thousand pins in a day.[1]

When we take tasks and break them down into smaller parts, we create local efficiencies; each person can become better and better at the small thing he does. (Henry Ford and Frederick Winslow Taylor extended the division-of-labor concept to the assembly line, finding that this approach reduced errors, increased productivity, and made it possible to produce cars and other goods en masse.) But we often don't realize that the division of labor can also exact a human cost. As early as 1844, Karl Marx—the German philosopher, political economist, sociologist, revolutionary, and father of communism—pointed to the importance of what he called "the alienation of labor." For Marx, an alienated laborer is separated from his own activities, from the goals of his labor, and from the process of production. This makes work an external activity that does not allow the laborer to find identity or meaning in his work.

I am far from being a Marxist (despite the fact that many people think that all academics are), but I don't think we should wholly discount Marx's idea of alienation in terms of its role in the workplace. In fact, I suspect that the idea of alienation was less relevant in Marx's time, when, even if employees tried hard, it was difficult to find meaning at work. In today's economy, as we move to jobs that require imagination, creativity, thinking, and round-the-clock engagement, Marx's emphasis on alienation adds an important ingredient to the labor mix. I also suspect that Adam Smith's emphasis on the efficiency in the division of labor was

more relevant during his time, when the labor in question was based mostly on simple production, and is less relevant in today's knowledge economy.

From this perspective, division of labor, in my mind, is one of the dangers of work-based technology. Modern IT infrastructure allows us to break projects into very small, discrete parts and assign each person to do only one of the many parts. In so doing, companies run the risk of taking away employees' sense of the big picture, purpose, and sense of completion. Highly divisible labor might be efficient if people were automatons, but, given the importance of internal motivation and meaning to our drive and productivity, this approach might backfire. In the absence of meaning, knowledge workers may feel like Charlie Chaplin's character in *Modern Times*, pulled through the gears and cogs of a machine in a factory, and as a consequence they have little desire to put their heart and soul into their labor.

In Search of Meaning

If we look at the labor market through this lens, it is easy to see the multiple ways in which companies, however unintentionally, choke the motivation out of their employees. Just think about your own workplace for a minute, and I am sure you will be able to come up with more than a few examples.

This can be a rather depressing perspective, but there is also space for optimism. Since work is a central part of our lives, it's only natural for people to want to find meaning—even the simplest and smallest kind—in it. The findings of the Legos and the letter-pairs experiments point to real opportunities for increasing motivation and to the dangers of crushing the feeling of contribution. If companies really want their workers to produce, they should try to impart a sense of meaning—not just through vision statements but by allowing employees to feel a sense of completion and ensuring that a job well done is acknowledged. At the end of the day, such factors can exert a huge influence on satisfaction and productivity.

Another lesson on meaning and the importance of completion comes from one of my research heroes, George Loewenstein. George analyzed reports of one particularly difficult and challenging undertaking: mountaineering. Based on his analysis, he concluded that climbing mountains is "unrelenting misery from beginning to end." But doing so also imparts a huge sense of accomplishment (and it makes for great dinner-table conversation). The need to complete goals runs deep in human nature—perhaps just as deep as in fish, gerbils, rats, mice, monkeys, chimpanzees, and parrots playing with SeekaTreats. As George once wrote:

> My own suspicion is that the drive toward goal establishment and goal completion is "hard wired." Humans, like most animals and even plants, are maintained by complex arrays of homeostatic mechanisms that keep the body's systems in equilibrium. Many of the miseries of mountaineering, such as hunger, thirst and pain, are manifestations of homeostatic mechanisms that motivate people to do what they need to survive . . . the visceral need for goal completion, then, may be simply another manifestation of the organism's tendency to deal with problems—in this case the problem

of executing motivated actions.[2]

Reflecting on these lessons, I decided to try to bring a sense of meaning to Jay's work by contextualizing it. I started spending some time every week explaining to him the research we were doing, why we were carrying out the experiments, and what we were learning from them. I found that Jay was generally excited to learn about and discuss the research, but a few months later he left MIT to get a master's degree in journalism, so I don't know if my efforts were successful or not. Regardless of my success with Jay, I keep on using the same approach with the people who currently work with me, including my current amazing right hand, Megan Hogerty.

In the end, our results show that even a small amount of meaning can take us a long way. Ultimately, managers (as well as spouses, teachers, and parents) may not need to increase meaning at work as much as ensure that they don't sabotage the process of labor. Perhaps the words of Hippocrates, the ancient Greek physician, to "make a habit of two things—to help, or at least do no harm" are as important in the workplace as they are in medicine.

Chapter 3
The IKEA Effect

Why We Overvalue What We Make

Every time I walk into IKEA, my mind overflows with home improvement ideas. The gigantic discount build-it-yourself home furnishings store is like a huge play castle for grown-ups. I walk through the various display rooms and imagine how that stylish desk or lamp or bookcase might look in my house. I love to inspect the inexpensive sleek dressers in the bedroom displays and check out all the utensils and plates in the shiny kitchens full of self-assembly cabinets. I feel an urge to buy a truckload of do-it-yourself furniture and fill my house with everything from cheap, colorful watering cans to towering armoires.

I don't indulge the IKEA urge very often, but I do make a trip when necessity calls. On one of these trips, I purchased an übermodern Swedish solution to the problem of the toys that lay scattered throughout our family room. I bought a self-assembly toy chest, took it home, opened the boxes, read the instructions, and started screwing the various pieces into place. (I should be clear that I'm not exactly talented in the domain of physical assembly, but I do find pleasure in the process of building—perhaps a remnant of playing with Legos as a child.) Unfortunately, the pieces were not as clearly marked as I would have hoped and the instructions were sketchy, especially during some crucial steps. Like many experiences in life, the assembly process impishly followed Murphy's Law: every time I was forced to guess the placement of a piece of wood or screw, I guessed incorrectly. Sometimes I realized my mistake right away. Other times I didn't realize I'd goofed until I was three or four steps into the process, which required me to backtrack and start over.

Still, I like puzzles, so I tried to view the process of reconstituting my IKEA furniture as doing a large jigsaw puzzle. But screwing the same bolts in and out made this mind-set difficult to keep, and the whole process took longer than I'd expected. Finally, I found myself looking at a fully assembled toy chest. I gathered my kids' toys and placed them carefully inside. I was very proud of my work, and for weeks afterward I smiled proudly at my creation each time I passed it. From an objective point of view, I am quite sure that it was not the highest-quality piece of furniture I could have purchased. Nor had I designed anything, measured anything, cut wood, or hammered any nails. But I suspect that the few hours I struggled with the toy chest brought us closer together. I felt more attached to it than any other piece of furniture in our house. And I imagined that it, too, was fonder of me than my other furniture was.

Something from the Oven

Pride of creation and ownership runs deep in human beings. When we make a

meal from scratch or build a bookshelf, we smile and say to ourselves, “I am so proud of what I just made!” The question is: why do we take ownership in some cases and not others? At what point do we feel justified in taking pride in something we’ve worked on?

At the low end of the creation scale are things such as instant macaroni and cheese which, personally, I can’t regard as an act of artistry. No unique skill is required to make it, and the effort involved is minimal: pick up a package, pay for it, take it home, open the box, boil the water, cook and drain the noodles, stir them together with butter, milk, and orange-colored flavoring, and serve. Accordingly, it is very hard to take any pride of ownership in such a creation. At the other end of the scale, there’s a meal made from scratch, such as your grandmother’s lovingly made chicken noodle soup, stuffed bell peppers, and Pippin apple pie. In those (rare) cases, we justifiably feel ownership and pride in our creation.

But what about the meals that fall somewhere between those two extremes? What if we “doctor” a jar of off-the-shelf pasta sauce with fresh herbs from our garden and a few elegant shavings of Parmigiano-Reggiano cheese? What if we add a few roasted peppers? And would it make a difference if the peppers were store-bought or grown in our garden? In short, how much effort must we expend in order to be able to view our own creations with pride?

To understand the basic recipe for ownership and pride, let’s take a historical look at semi-preprepared food. From the moment instant baking mixes of all kinds (for piecrusts, biscuits, and so on) were introduced in the late 1940s, they had a strong presence in American grocery carts and pantries, and ultimately at the dinner table. However, not all mixes were greeted with equal enthusiasm. Housewives were peculiarly reticent about using instant cake mixes, which required simply adding water. Some marketers wondered whether the cake mixes were too sweet or artificial-tasting. But no one could explain why the mixes used to make piecrusts and biscuits—made up of pretty much the same basic ingredients—were so popular, while cake mixes didn’t sell. Why did hardworking housewives not particularly care if the piecrusts they used came out of a box? Why were they more sensitive about cakes?

One theory was that the cake mixes simplified the process to such an extent that the women did not feel as though the cakes they made were “theirs.” As the food writer Laura Shapiro points out in her book *Something from the Oven*,[3] biscuits and piecrusts are important, but they are not a self-contained course. A housewife could happily receive a compliment on a dish that included a purchased component without feeling that it was inappropriately earned. A cake, on the other hand, is often served by itself and represents a complete course. On top of that, cakes often carry great emotional significance, symbolizing a special occasion.* A would-be baker would hardly be willing to consider herself (or publicly admit to being) someone who makes birthday cakes from “just a mix.” Not only would she feel humiliated or guilty; she might also disappoint her guests, who would feel that they were not being treated to something special.

At the time, a psychologist and marketing expert by the name of Ernest Dichter speculated that leaving out some of the ingredients and allowing women to add them to the mix might resolve the issue.•* This idea became known as the “egg theory.” Sure enough, once Pillsbury left out the dried eggs and required women to

add fresh ones, along with milk and oil, to the mix, sales took off. For housewives in the 1950s, adding eggs and one or two other ingredients was apparently enough to elevate cake mixes from the realm of store-bought to servable, even if the dessert was only slightly doctored. This basic drive for ownership in the kitchen, coupled with the desire for convenience, is why the Betty Crocker slogan "You and Betty Crocker can bake someone happy" is so clever. The work is still yours, with a little time- and laborsaving help from a domestic icon. There's no shame in that, right?

In my mind, one person who understands, better than anyone else, the delicate balance between the desire to feel pride of ownership and the wish to not spend too much time in the kitchen is Sandra Lee of "Semi-Homemade" fame. Lee has literally patented a precise equation delineating the point at which this crossover occurs: the "70/30 Semi-Homemade® Philosophy." According to Lee, overextended cooks can feel the joy of creation while saving time by using ready-made products for 70 percent of the process (think cake mix, store-bought minced garlic, a jar of marinara sauce) and 30 percent "fresh creative touches" (a bit of honey and vanilla in the cake mix, fresh basil in the marinara sauce). To the delight of viewers and the frustration of gourmets and foodies, she combines off-the-shelf products with just the right amount of personalization.

For example, here is Sandra Lee's recipe for "Sensuous Chocolate Truffles":[4]

Prep Time: 15 min
Level: Easy
Yield: about 36 truffles

Ingredients:
1 (16-ounce) container chocolate frosting
¾ cup powdered sugar, sifted
1 teaspoon pure vanilla extract
½ cup unsweetened cocoa powder

Directions:
Line 2 cookie sheets with parchment paper. With a hand mixer, beat frosting, powdered sugar, and vanilla in large bowl until smooth. Using a tablespoon . . . form into balls and place on cookie sheet. Dust truffles with cocoa powder. Cover and refrigerate truffles until ready to serve.

In essence, Sandra Lee has perfected the egg theory, demonstrating to her ebullient followers the minimum effort it takes to be able to *own* an otherwise impersonal dish. Her television show, magazine, and numerous cookbooks offer evidence that a spoonful of ownership is a crucial ingredient in the psychological exercise that is cooking.

Pride of ownership is hardly confined to women and kitchens, of course. Local

Motors, Inc., a more manly company, takes the egg theory even further. The small firm allows you to design and then physically build your own car over a period of roughly four days. You can choose a basic design and then customize the final product to taste, keeping regional and climatic considerations in mind. Of course, you don't build it by yourself; a group of experts helps you. The clever idea behind Local Motors is to allow customers to experience the "birth" of their car and a deep connection to something personal and precious. (How many men refer to their car as "my baby"?) Really, it's a remarkably creative strategy; the energy and time that you invest in building your car ensures that you will love it almost as you love your precious kids.

Of course, sometimes things that we value transform us from pleasurable attachment to complete fixation, as was the case with Gollum's precious ring in J. R. R. Tolkien's *Lord of the Rings* trilogy. Whether it's a magical ring, a lovingly constructed car, or a new throw rug, a precious object can come to consume certain kinds of people. (If you suffer from overweening love for such an object, repeat after me: "It's just a [fill in the blank: car, rug, book, toy box . . .]."")

I Love My Origami

Of course, the notion that an investment of labor results in attachment is not a new one. Over the last few decades, many studies have shown that an increase in effort can result in an increase in value across many different domains.* For example, as the effort people invest in getting initiated into a social group, such as a fraternity or tenured faculty, becomes more wearisome, painful, and humiliating, the more its members value their group. Another example might be a Local Motors customer who, after spending $50,000 and several days to design and construct his car, might say to himself, "Having just gone through all of this incredible effort, I really, *really* love this car. I will take good care of it and cherish it forever."

I told the story of my beautiful toy chest to Mike Norton (who is currently a professor at Harvard University) and Daniel Mochon (a postdoctoral associate at the University of California at San Diego), and we discovered that we all had similar experiences. I'm sure you have, too. For instance, let's say you're visiting your Aunt Eva. The walls of her house are decorated with a lot of homemade art: framed drawings of oddly shaped fruit resting next to a bowl, halfhearted watercolors of trees by a lake, something resembling a fuzzy human shape, and so on. When you look at this aesthetically challenged artwork, you wonder why your aunt would hang it on her wall. On closer inspection, you notice that the fancy signature at the bottom of the paintings is Aunt Eva's. All of a sudden it is clear to you that Aunt Eva doesn't merely have bizarre taste; rather, she is blinded by the appeal of her own creation. "Oh, my!" you say loudly in her direction. "This is lovely. Did you paint this yourself? It's so, um . . . intricate!" On hearing her work so praised, dear Eva reciprocates by showering you with her homemade oatmeal raisin cookies, which fortunately are a vast improvement on her artwork.

Mike, Daniel, and I decided that the notion of attachment to the things we make was worth testing, and in particular we wanted to understand the process by which labor begets love. Our first step (as in all important research projects) was to come up with a code name for the effect. In honor of the inspiration for the study, we decided to call the overvaluation resulting from labor "the IKEA effect." But simply

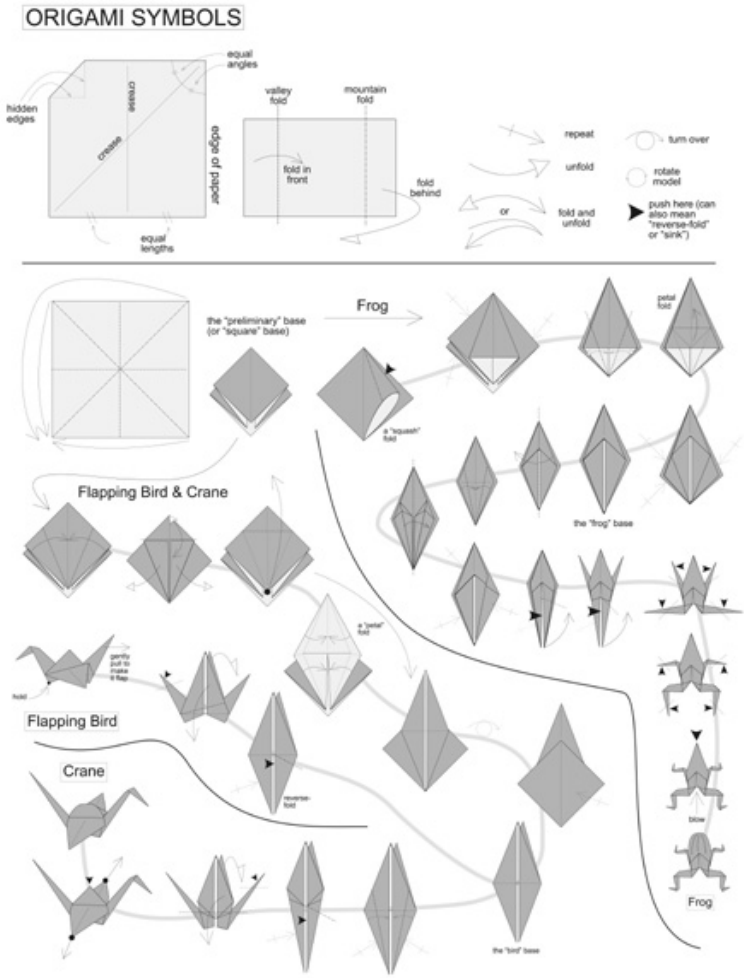
documenting the IKEA effect was not what we were after. We wanted to find out whether the greater perceived value resulting from the IKEA effect might be based on sentimental attachment ("It's crooked and barely strong enough to hold my books, but it's *my* bookshelf!") or on self-delusion ("This bookshelf is easily as nice as the $500 version at Design Within Reach!").

IN KEEPING WITH Aunt Eva and the art theme, Mike, Daniel, and I set off to visit a local art store in search of experimental material. Figuring that clay and paint were a bit too messy, we decided to base our first experiment on the Japanese art of origami. A few days later, we set up an origami booth in the student center at Harvard and offered students the opportunity to create either an origami frog or an origami crane (which were of similar complexity). We also told the participants that their finished creations would technically belong to us but that we would give them the opportunity to bid for their origami in an auction.

We told participants that they were going to bid against a computer using a special method called the Becker-DeGroot-Marschak procedure (named after its inventors), which we then explained to them in minute detail. In short, a computer would spit out a random number after the participant made his or her bid for the item. If the participant's bid was higher than the computer's, they would receive the origami and pay the price set by the computer. On the other hand, if a participant's bid was lower than the computer's, they would not pay a thing nor receive the origami. The reason we used this procedure was to ensure that it was in the participant's best interest to bid the highest amount that they were willing to pay for their origami—not a penny more or less.*

One of the first people to approach the booth was Scott, an eager third-year political science major. After explaining the experiment and the rules of the auction, we provided him with the instructions for creating both the frog and the crane (see the figure on the following page). If you happen to have appropriate paper handy, feel free to try it yourself.

Origami instructions



Scott, whom we put into the creator condition, carefully followed the instructions, making sure each fold matched the diagram. In the end, he had made a very passable origami frog. When we asked what he would bid for it (using the Becker-DeGroot-Marschak procedure), he paused and then said firmly, “Twenty-five cents.” His bid was very close to the average bid in the creator condition, which was 23 cents.

Just then another student named Jason wandered up to the table and looked at Scott’s little creation. “What would you bid for this frog?” the experimenter asked. Since Jason was just a passerby, he was in the noncreator condition; his job was simply to tell us how much he valued Scott’s creation. Jason picked up the folded paper and examined its well-formed head and uneven legs. He even pushed it on its backside to make it jump a little. Finally, his bid for the frog (again using the

Becker-DeGroot-Marschak procedure) was 5 cents, which was the average for those in the noncreator condition.

There was a distinct difference in valuation between the two conditions. The noncreators, like Jason, saw amateurish crumples of paper that looked more like folded mutations created by an evil scientist in a basement laboratory. At the same time, the creators of those crumples clearly imbued them with worth. Still, we did not know from this difference in bidding what caused the disparity in evaluations. Did the creators simply enjoy the art of origami in general, while the noncreators (who did not get a chance to make origami) were indifferent to folded sheets of paper? Or did the participants in both conditions appreciate origami to the same degree, while the creators were deeply in love with their own particular creations? Put another way, did Scott and his cohorts fall in love with origami in general or just with their own creations?

To get an initial answer to these questions, we asked two origami experts to make frogs and cranes. Then we asked another group of noncreators to bid on their objectively gorgeous work. This time, the noncreators bid an average of 27 cents. The degree to which noncreators valued the professional-looking origami was very close to the bids made by Scott and his friends on their own amateurish art (23 cents) and much higher than the bids of the noncreators on the amateurish art (5 cents).

These results showed us that the creators had a substantial bias when evaluating their own work. Noncreators viewed the amateurish art as useless and the professional versions as much, much more exciting. In contrast, the creators saw their own work as almost as good as the experts' origami. It seemed that the difference between creators and noncreators was not in how they viewed the art of origami in general but in the way that the creators came to love and overvalue their own creations.

In summary, these initial experiments suggest that once we build something, we do, in fact, view it with more loving eyes. As an old Arabic saying goes, "Even the monkey, in his mother's eyes, is an antelope."

Customization, Labor, and Love

At the birth of the automotive industry, Henry Ford quipped that any customer could have a Model T painted any color that they wanted so long as it was black. Producing cars in just one color kept costs low so that more people could afford them. As manufacturing technology evolved, Ford was able to produce different makes and models without adding too much to their cost.

Fast-forward to today, when you can find millions of products to suit your taste. For example, you can't walk down Fifth Avenue in New York without being amazed by the wonderful and weird women's shoe styles in the window displays. But as more and more companies invite customers to take part in product design, this model is also changing. Thanks to improvements in Internet technology and automation, manufacturers are allowing customers to create products that fit their individual idiosyncrasies.

Consider Converse.com, a Web site where you can design your own casual sneakers. After you pick the style of shoe you want (generic or selected designer low tops, high tops, extrahigh tops) and the material (canvas, leather, suede), you

then enjoy a round of paint by numbers. You pick from a palette of colors and patterns, point to a part of the shoe (inner body, rubber sidewall, laces), and decorate each part to your liking. By allowing you to design your shoes to suit your taste, Converse gives you not only a product that you really like but one that is unique to you.

More and more companies are getting in on the customization act. You can design your own kitchen cabinetry, build your own Local Motors car, create your own shoes, and more. If you follow the common arguments in favor of this kind of tailoring, you might think that the ideal type of customization Web site is one that is clairvoyant—one that quickly figures out what your ideal shoe might be and delivers it to you with as little effort as possible on your part. As cool as this may sound, if you used such an efficient tailoring process, you would miss out on the benefits of the IKEA effect, in which, through investment of thought and effort, we come to love our creations much more.

Does this mean that companies should always require their customers to do the design work and labor on every product? Of course not. There is a delicate trade-off between effortlessness and investment. Ask people to expend too much effort, and you can drive them away; ask them for too little effort, and you are not providing the opportunities for customization, personalization, and attachment. It all depends on the importance of the task and on the personal investment in the product category. For me, a paint-by-numbers approach to shoes or a jigsaw-puzzle-style toy chest strikes the right balance; anything less would not tap into my desire for the IKEA effect, and anything more would make me give up. As companies start to understand the true benefits of customization, they might start generating products that allow customers to express themselves and ultimately give them higher value and enjoyment.*

In our next experiment, we wanted to test whether the overvaluation by creators would persist if we removed all possibility of individual customization. So we had our participants construct a bird, duck, dog, or helicopter from prepackaged Lego sets. Using Lego sets achieved our no-tailoring objective because the participants were required to follow the instructions with no room for variation. That way, all the creations ended up looking exactly the same. As you probably expected, the creators were still willing to pay much more for their own work, despite the fact that their work was identical to the work made by the other creators.

The results of this experiment suggest that the effort involved in the building process is a crucial ingredient in the process of falling in love with our own creations. And though tailoring is an additional force that can further cause us to overvalue what we have built, we'll overvalue it even without tailoring.

Understanding Overvaluation

The origami and Legos experiments taught us that we become attached to things that we invest effort in creating, and, once that happens, we start overvaluing these objects. Our next question was whether we are aware or unaware of our tendency to ascribe increased value to our beloved creations.

For example, think about your children. Assuming that you are like most parents, you think very highly of your own kids (at least until they enter the

monster adolescent years). If you are unaware that you overvalue your own children, this will lead you to erroneously (and perhaps precariously) believe that other people share your opinion of your adorable, smart, and talented kids. On the other hand, if you were aware that you overvalue them, you would realize, with some pain, that other people don't see them in the same glowing light as you do.

As a parent who frequently travels on airplanes, I get to experience this effect during the ritual of picture exchange. Once we're up at a comfortable 30,000 feet, I pull out my laptop, on which I have lots of pictures and videos of my kids. Inevitably, the person next to me peeks at the screen. If I perceive even the slightest interest from my neighbor, I start with a slide show of my little boy and girl, who are obviously the most adorable children in the world. Of course, I assume that my neighbor notices how wonderful and unique they are, how charming their smiles, how cute they look in their Halloween costumes, and so on. Sometimes, after having so enjoyed watching my kids, my viewing buddy suggests that I look at pictures of his kids. A minute or two into the experience, I find myself wondering, "What is this guy thinking? I don't want to sit here for twenty-five minutes looking at pictures of strange kids I don't even know! I have work to do! When is this damn plane finally going to land?"

In reality, I suspect that very few people are either wholly unaware, or else completely aware, of their children's gifts and faults, but I'll bet that most parents are closer to the unaware philoprogenitive type (people who are inclined to favor their own children). This means that parents not only think that their kids are among the cutest things on the planet, they also believe that other people think so, too.

This is likely why O. Henry's story "The Ransom of Red Chief" is so striking. In it, two thieves looking to turn a quick buck kidnap the child of a prominent Alabaman and demand a $2,000 ransom. The father refuses to pay the kidnappers, who quickly find out that the redheaded kid (Red Chief) actually enjoys being with them. Moreover, he is a terrible brat who likes to play pranks and make their lives miserable. The kidnappers lower their ransom, while Red Chief continues to drive them crazy. Finally the father offers to take the child back if the kidnappers pay *him* $250, and, despite Red Chief's protest, they leave him and escape.

NOW IMAGINE YOU are a participant in another origami-building experiment. You've just finished creating your paper crane or frog, and it is now up for auction. You decide how much to bid on it and offer a decidedly high amount. Are you aware that you are overbidding and that other people will not see your creation as you do? Or do you also think that others share your affinity for your creation?

To find out, we compared the results of two different bidding procedures called first-price and second-price auctions. Without going too much into the technical differences,* if you were bidding using a second-price bidding procedure, you should carefully consider *only* how much you value your little paper creature.* In contrast, if you were bidding using a first-price bidding procedure, you should take into consideration both your own love for the object *and* how much you think others will bid for it. Why do we need this complexity? Here is the logic: if the creators realized that they were uniquely overimpressed with their own frogs and cranes, they would bid more when using the second-price auction (when only their value matters) than when using the first-price auction (when they should also take

into account the values of others). In contrast, if the creators did not realize that they were the only ones who overvalued their origami and they thought that others shared their perspective, they would bid a similarly high amount in both bidding procedures.

So did the origami builders understand that others didn't see their creations as they did? We found that creators bid the same amount when they considered only their own evaluation for the product (second-price auction) as when they also considered what noncreators would bid for it (first-price auction). The lack of difference between the two bidding approaches suggested not only that we overvalue our own creations but also that we are largely unaware of this tendency; we mistakenly think that others love our work as much as we do.

The Importance of Completion

Our experiments on creation and overvaluation reminded me of some skills I acquired while I was in the hospital. Among the many painful and annoying activities I had to endure (6:00 A.M. wake-ups for blood tests, excruciating bandage removal, nightmarish treatments, and so on), one of the least distressing but most boring activities was occupational therapy. For months, the occupational therapists put me in front of a table and would not let me leave until I finished placing 100 bolts on screws, sticking and unsticking pieces of wood covered with Velcro to other pieces of wood, placing pegs in holes, and other such mind-numbing tasks.

In the rehabilitation center across the hallway was an area for kids with difficult developmental problems who were taught different practical skills. In an effort to do things that were slightly more interesting than putting bolts on screws, I managed to join in on these more appealing activities. Over a period of a few months, I learned how to use a sewing machine, knit, and do some elementary woodwork. Given the difficulty I had with moving my hands, these tasks were not easy. My creations did not always come out as planned, but I did work very hard to create something. By engaging in all of these activities, I changed the occupational therapy from a dreadful, boring part of the day to something I looked forward to. Although the occupational therapists tried periodically to get me to return to the mind-numbing tasks—presumably because their physiological therapeutic value might have been somewhat higher—the pleasure and pride I derived from creating something was on a different order of magnitude altogether.

My biggest success was with the sewing machine, and over time I made some pillowcases and funky clothes for my friends. My sewing creations were like the amateurish origami of our participants. The corners of the pillowcases were not sharp, and the shirts I made were misshapen, but I was nevertheless proud of them (I was especially proud of a blue-and-white Hawaiian-style shirt that I made for my friend Ron Weisberg). After all, I had invested an incredible amount of effort in making them.

That was more than twenty years ago, but I still remember very clearly the shirts I made, the different steps in their creation, and the final outcome. In fact, my attachment to my creations was so strong that I was somewhat surprised when, a few years ago, I asked Ron if he remembered the shirt I'd made for him. Though I recalled it vividly, he had only a vague memory of it.

I ALSO REMEMBER other creations I worked on in the rehabilitation center. I tried to weave a carpet, sew a jacket, and make a set of wooden chess pieces. I started those projects with much enthusiasm and invested a lot of effort in them, but I found that they were beyond my ability and left them half done. Interestingly, when I reflect on those incomplete creations, I realize that I have no particular affection for them. Somehow, despite the incredible amount of effort I invested in their unfinished creation, I did not end up loving those partially made objets d'art.

My recollections of the rehabilitation center make me wonder if it is important to complete a project in order to overvalue it. In other words, in order to enjoy the IKEA effect, is it necessary for our efforts to result in success, even if that success simply means that the project was finished?

According to our reasoning behind the IKEA effect, more effort imbues greater valuation and appreciation. This means that to increase your feelings of pride and ownership in your daily life, you should take a larger part in creating more of the things you use in your daily life. But what if just investing effort is not enough? What if completion is also a crucial ingredient for attachment? If this is the case, we should think not only about all the objects that we might end up loving but also about the rickety shelves, bad artwork, and lopsided ceramic vases that are likely to sit unfinished in the garage for years.

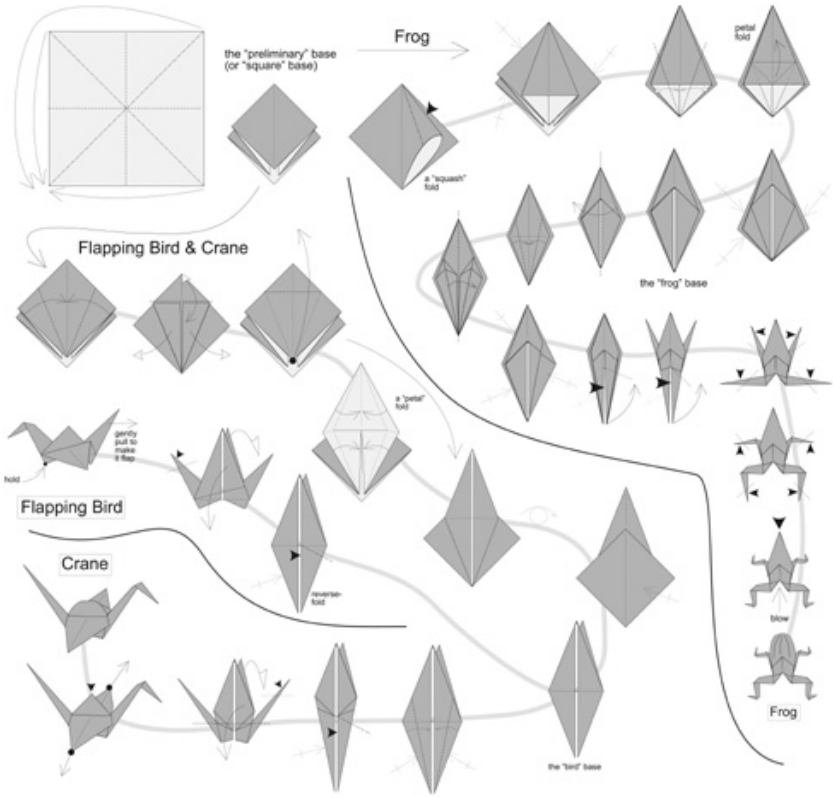
To find out whether completion is a crucial ingredient for falling in love with our own creations, Mike, Daniel, and I conducted an experiment similar to our original origami study, but with an important addition: we introduced the element of failure. We went about this by creating another set of origami instructions that —not unlike my IKEA instructions—withheld some important information.

To give you a better idea, try the instructions we gave the participants in the difficult condition. Cut a normal 8½-by-11-inch sheet of paper into an 8½-by-8½-inch square and follow the instructions on the opposite page.

If your frog looks more like an accordion that has been run over by a truck, don't feel bad. About half of the participants who received these difficult instructions managed to create some odd-looking creation, while the rest didn't even manage to get that far and ended up with only an unduly folded sheet of paper.

If you compare these difficult instructions to the easy instructions for the original origami experiment (see page 92), you can easily identify the missing information. Participants in the difficult condition didn't know that an arrow with a little hatch mark at the end meant "repeat" or that an arrow with a triangle point meant "unfold."

Origami instructions (somewhat more complex)



After running this experiment for a while, we had three groups: one that got the easy instructions and completed their task; a second group that worked with the difficult instructions yet somehow managed to complete the task; and a third group faced with the difficult instructions that failed to complete their task. Did the people in the difficult condition, who, by definition, had to work harder, value their unfortunate creations more than those who more easily and successfully turned out decent-looking cranes and frogs? And how did those who struggled with the difficult set of instructions but managed to complete the task compare with those who worked hard at it but didn't succeed?

We found that those who successfully completed their origami in the difficult condition valued their work the most, much more than those in the easy condition. In contrast, those in the difficult condition who did not manage to finish their work valued their results the least, much less than those in the easy condition. These results imply that investing more effort does, indeed, increase our affection, but only when the effort leads to completion. When the effort is unfruitful, affection for one's work plummets. (This is also why playing hard to get can be a successful strategy in the game of love. If you put an obstacle in the way of someone you like and they keep on working at it, you're bound to make that

person value you even more. On the other hand, if you drive that person to extremes and persist in rejecting them, don't count on staying "just friends.")

Labor and Love

Our experiments demonstrated four principles of human endeavor:

- The effort that we put into something does not just change the object. It changes us and the way we evaluate that object.
- Greater labor leads to greater love.
- Our overvaluation of the things we make runs so deep that we assume that others share our biased perspective.
- When we cannot complete something into which we have put great effort, we don't feel so attached to it.

In light of these findings, we might want to revisit our ideas about effort and relaxation. The simple economic model of labor states that we are like rats in a maze; any effort we put into doing something removes us from our comfort zone, creating undesirable effort, frustration, and stress. If we buy into this model, it means that our paths to maximize our enjoyment in life should focus on trying to avoid work and increase our immediate relaxation. That's probably why many people think that the ideal vacation involves lying lazily on an exotic beach and being served mojitos.

Similarly, we think we will not enjoy assembling furniture, so we buy the ready-made version. We want to enjoy movies in surround sound, but we imagine the stress involved in trying to connect a four-speaker stereo system to a television, so we hire somebody else do it for us. We like sitting in a garden but don't want to get sweaty and dirty digging up a garden space or mowing the lawn, so we pay a gardener to cut the grass and plant some flowers. We want to enjoy a nice meal, but shopping and cooking are too much trouble, so we eat out or just pop something into the microwave.

Sadly, in surrendering our effort in these activities, we gain relaxation, but we may actually give up a lot of deep enjoyment because, in fact, it's often effort that ultimately creates long-term satisfaction. Of course, it might be that others can do better wiring work or gardening (in my case, this is certainly true), but you might ask yourself, "How much more will I enjoy my new television/stereo setup/garden/meal after I work on it?" If you suspect you would enjoy it more, maybe those are cases where investing more effort will pay off.

And what about IKEA? Sure, its furniture is sometimes hard to put together, and the instructions can be difficult to follow. But since I value the "Semi-Homemade" approach to furniture, I am going to expend some sweat while I screw in some bolts. I'll probably get annoyed from time to time while I am assembling my next bookcase, but in the end, I'll hope to fall in love with the modern-art furniture I've made and reap higher enjoyment dividends over the long run.

Chapter 4
The Not-Invented-Here Bias

Why "My" Ideas Are Better than "Yours"

From time to time, I present different research findings to groups of executives in the hope that they will use some of them to create better products. I also hope that they will, having deployed the ideas in their companies, share with me their results on how the ideas worked out.

During one such meeting, I offered a group of banking executives some thoughts about ways they might help consumers save money for the future, rather than encouraging them to spend their paychecks as soon as they get them. I described some of the difficulties we all have when thinking about the opportunity cost of money ("If I buy that new car today, what won't I be able to do in the future?"). I proposed some ways in which the bankers might concretely represent the trade-off between spending now and saving for tomorrow to help their customers improve their financial decision making, and, in the process, increase their customer base and loyalty.

Unfortunately, the bankers didn't seem terribly stirred by what I had to say. In the course of trying to interest them, I remembered an essay by Mark Twain called "Some National Stupidities." In his essay, Twain praises the German stove and bemoans the fact that Americans continue to rely on monstrous woodstoves that practically require a dedicated full-time staff to keep them running:

> The slowness of one section of the world about adopting the valuable ideas of another section of it is a curious thing and unaccountable. This form of stupidity is confined to no community, to no nation; it is universal. The fact is the human race is not only slow about borrowing valuable ideas—it sometimes persists in not borrowing them at all.
>
> Take the German stove, for instance—the huge white porcelain monument that towers toward the ceiling in the corner of the room, solemn, unsympathetic, and suggestive of death and the grave—where can you find it outside of German countries? I am sure I have never seen it where German was not the language of the region. Yet it is by long odds the best stove and the most convenient and economical that has yet been invented.[5]

According to Twain, Americans turned up their noses at German stoves simply because they hadn't come up with the better design themselves. Analogously, here I was, looking at a sea of unenthusiastic faces. I was presenting the bankers with a

good idea—not just some vague notion but one supported by solid data. They sat back passively in their chairs, clearly not taking in the possibilities. I began to wonder if the lack of excitement on their part was due to the fact that the idea was mine rather than theirs. If that were the case, should I try to get the executives to think that the idea was their own or at least partially theirs? Would that make them more interested in trying it out?

The situation reminded me of a commercial that FedEx ran a while back. A group of shirt-and-tie-wearing employees are sitting around a boardroom table, and the more formally attired boss announces that their objective is to save the company money. A doleful-looking, curly-haired employee offers the following suggestion: "Well, we could get an online account with FedEx and save ten percent on all our shipping costs." The other employees glance around in silence, waiting for a signal from their leader, who has been listening quietly, hands folded meditatively in front of his face. After a moment's silence, he emphatically slices the air with his hands—and then repeats what his sad-eyed employee has just said. The other workers cheer sycophantically. The fellow who made the suggestion points out that he just said the same thing. "But you didn't go like *this*," his boss responds, repeating his emphatic slicing gesture.

To me, this humorous commercial demonstrated a crucial question of how people relate to their own and others' ideas: how important is it for us to come up with an idea, or at least to feel that it is ours, in order to value it?

The attraction to one's own ideas has not escaped the collective folk wisdom of the business world, and, like other important business processes, this one also has an unofficial term attached to it: the "Not-Invented-Here" (NIH) bias. The principle is basically this: "If I (or we) didn't invent it, then it's not worth much."

Any Solution, as Long as It's Mine

With our understanding of human attachment to self-made physical goods (see the previous chapter on the IKEA effect), Stephen Spiller (a doctoral student at Duke University), Racheli Barkan, and I decided to examine the process by which we become attached to ideas. Specifically, we wanted to test whether the process of creating an original idea is analogous to building one's own toy chest.

We asked John Tierney, the science writer for *The New York Times*, to post a link on his blog[6] asking his readers to take part in a study about ideas. A few thousand people followed the link, were asked about some general problems that the world is facing, and evaluated solutions to these problems. Some respondents proposed their own answers to these problems and then evaluated them, while others sized up solutions that Stephen, Racheli, and I came up with.

In our first experiment, we asked some participants to look at a list of three problems one at a time and generate their own proposed solution for each. (We called this the creation condition.) The problems were:

Question 1: How can communities reduce the amount of water they use without imposing tough restrictions?

Question 2: How can individuals help to promote our "gross national happiness"?

Question 3: What innovative change could be made to an alarm clock to make it more effective?

Once the participants finished generating their three solutions, we asked them to go back and rate each one on practicality and probability of success. We also asked them to tell us how much of their own time and money they would donate to promote their proposed solutions.

For the noncreation condition, we asked another group of participants to look at the same set of problems, but they didn't get to suggest any solutions. Instead, we asked them to evaluate the solutions that Stephen, Racheli, and I came up with and evaluate our solutions in the same way that the participants in the creation condition evaluated their own solutions.

In all cases, the participants rated their own solutions as much more practical, as having a greater potential for success, and so on. They also said that they would invest more of their time and money into promoting their own ideas rather than any of the ones we came up with.

We were pleased to come away with this type of supportive evidence for our Not-Invented-Here bias, but we didn't know exactly why our participants felt that way. For one thing, it was quite possible that their ideas really were better, objectively speaking, than the ones we came up with. But even if their ideas weren't superior to ours overall, it could have been that our participants' notions fit better with their own unique perspectives of the world. This principle is called an idiosyncratic fit. As an extreme example of this, imagine that a devoutly religious individual answered the question "How can individuals help to promote our 'gross national happiness'?" by suggesting that everyone attend religious services daily. A steadfast atheist might respond to the same question by suggesting that everyone give up religion and focus instead on following the right kind of diet and exercise program. Each person may prefer his or her idea to ours —not because he or she came up with it but because it idiosyncratically fits with his or her underlying beliefs and preferences.

It was rather clear to us that the results of this first experiment demanded further probing. We did not know how much the increase in excitement over the participants' own ideas was due to their objective quality; how much of it was due to their idiosyncratic fit; or how much of it, if any, was rooted in the ownership of the idea. To focus our test on the ownership part of the Not-Invented-Here bias, we needed to create a situation in which neither objective quality or idiosyncratic fit could be the driving force. (This, by the way, does not mean that the other two forces do not operate in the real world—of course they do. We only wanted to test whether the ownership of ideas is another force that can bring about overvaluations.)

To that end, we set up our next experiment. This time, we asked each of our participants to examine and evaluate six problems—the three that we used in the first experiment and three additional ones (see the list of the problems and the proposed solutions on the next page). But this time, instead of having some people take the role of creators and others the role of noncreators, we asked everyone to participate in both conditions (a within-participant design). Each participant evaluated three of the problems along with our proposed solutions, which put them in the role of noncreators. For the remaining three problems, we asked

participants to come up with their own solutions and then evaluate them, which means that, for these three solutions, they were in the role of creators.*

Up to this point, the procedure sounds basically the same as the first experiment. The next difference was the important one for teasing apart the various possible explanations. We wanted the participants to come up with solutions on their own so that they felt ownership of them, but we also wanted them to come up with the *exact same solutions* that we came up with (so that better ideas or an idiosyncratic fit could not play a role). How could we achieve this feat?

Before I tell you what we did, take a look at the six problems and our proposed solutions on the next page. Remember that each participant saw only three of these problems with our proposed solutions and came up with solutions for the remaining three.

Problem 1: How can communities reduce the amount of water they use without imposing tough restrictions?
Proposed solution: Water lawns using recycled gray water recovered from household drains.

Problem 2: How can individuals help to promote our "gross national happiness"?
Proposed solution: Perform random acts of kindness on a regular basis.

Problem 3: What innovative change could be made to an alarm clock to make it more effective?
Proposed solution: If you hit snooze, your coworkers are notified via e-mail that you overslept.

Problem 4: How can social networking sites protect user privacy without restricting the flow of information?
Proposed solution: Use stringent default privacy settings, but allow users to relax them as necessary.

Problem 5: How can the public recover some of the money wasted on political campaigning?
Proposed solution: Challenge candidates to match their ad spending with charity contributions.

Problem 6: What's one way to encourage Americans to save more for retirement?
Proposed solution: Just chat around the water cooler with colleagues about saving.

For each of the three problems for which participants had to come up with their own solutions, we gave them a list of fifty words and told them to use *only* these words to create their proposed solution. The trick was that each list was made of the words that made up our solution to that particular problem and several synonyms for each of these words. We hoped that this procedure would give the participants the feeling of ownership, while guaranteeing that their answers would be the same as ours.

For example, look at the list of possible words for answering the question "How can communities reduce the amount of water they use without imposing tough restrictions?" on the next page.

If you look closely at this list, you may notice another trick. We put the words that made up our proposed solution at the top of the list (water lawns using recycled gray water recovered from household drains), so participants saw those words first and consequently were more likely to come up with the same solution themselves.

We compared the value participants attributed to the three solutions we gave them with the three solutions that they "came up with." Again, we found that participants appreciated their own solutions more. Even when we could not attribute the increase in perceived brilliance of the ideas to objective quality or to their idiosyncratic fit, the ownership component of the Not-Invented-Here bias was still going strong. At the end of the day, we concluded that once we feel that we have created something, we feel an increased sense of ownership—and we begin to overvalue the usefulness and the importance of "our" ideas.

water	recycled	lawns	household	using	treated	recovered	drains	from	gray
watering	on	shower	gardens	crops	to	used	mostly	semi	down
dirty	instead	clean	the	domestic	consumption	set	home	an	already
irrigation	reuse	partly	partially	then	by	system	activities	clarify	a
sprinkler	use	purify	recycle	other	in	wash	for	as	of

Now, choosing a few words from a list of fifty to generate an idea is not very difficult, but it still takes some effort. We wondered if even less effort could make people think that an idea is theirs—the equivalent of Sandra Lee's Semi-Homemade in the domain of ideas. What if we simply gave people our one-sentence solution but in a mixed word order? Would the simple act of reordering the words to form the solution be enough to make people think the idea was theirs and consequently overvalue it? For example, consider one of the problems we used:

Problem: How can communities reduce the amount of water they use without imposing tough restrictions?

Would *New York Times* readers be less impressed with the solution if it were written in a meaningful order and they were just asked to evaluate it? What would happen if we gave participants the same solution in a jumbled order and asked them to rearrange it into a grammatically correct sentence?

Here's the solution written with words in a meaningful order:

Proposed solution: Water lawns using recycled gray water recovered from household drains.

And here's the solution written with words out of order:

Words for the proposed solution: lawns drains using gray recycled recovered water household water from.

Did the jumbling make a difference? You bet! As it turned out, even reordering the words was sufficient for our participants to feel ownership and like the ideas better than the ones given to them.

Alas, we also discovered that Mark Twain was right.

A Negative Current

Now, you might ask, "Aren't there areas—like scientific research—where the all-too-human preference for one's own ideas takes a backseat? Where an idea is judged on its objective merits?"

As an academic, I wish I could tell you that the tendency to fall in love with our own ideas never happens in the clean, objective world of science. After all, we like to think that scientists care most about evidence and data and that they all work collectively, without pride or prejudice, toward a joint goal of advancing knowledge. This would be nice, but the reality is that science is carried out by human beings. As such, scientists are constrained by the same 20-watt-per-hour computing device (the brain) and the same biases (such as a preference for our own creations) as other mortals. In the scientific world, the Not-Invented-Here bias is fondly called the "toothbrush theory." The idea is that everyone wants a toothbrush, everyone needs one, everyone has one, but no one wants to use anyone else's.

"Wait," you might argue. "It is very good for scientists to be overattached to their own theories. After all, this could motivate them to spend weeks and months in small laboratories and basements laboring over boring, tedious tasks." Indeed, the Not-Invented-Here bias can create a higher level of commitment and cause people to follow through on ideas that are their own (or that they think are their own).

But as you've probably guessed, the Not-Invented-Here bias can also have a dark side. Consider a famous example of someone who fell too deeply in love with his own ideas and the cost associated with this fixation. In his book *Blunder*, Zachary Shore describes how Thomas Edison, the inventor of the lightbulb, fell hard for direct current (DC) electricity. A Serbian inventor named Nikola Tesla came to work for Edison and developed alternating current electricity (AC) under Edison's supervision. Tesla argued that unlike direct current, alternating current could not only illuminate lightbulbs over greater distances, it could also power gigantic industrial machines using the same electrical grid. In short, Tesla claimed that the modern world required AC—and he was right. Only AC could provide the scale and scope needed for extensive use of electricity.

Edison, however, was so protective of his creation that he dismissed Tesla's ideas as "splendid, but utterly impractical."[7] Edison could have had the patent for AC since Tesla had worked for him when he invented it, but his love for DC was too strong.

Edison set out to discredit AC as dangerous, which indeed at the time it was. The worst that could happen to anyone who touched a live DC wire would be a powerful shock—jolting, but not lethal. Touching a live wire running AC, on the

other hand, could kill instantly. The early AC systems of the late nineteenth century in New York City were made up of crisscrossed, overhanging, exposed wires. Repair workers had to cut through dead lines and reconnect faulty ones without adequate safeguards (which modern systems now have). Occasionally, people were electrocuted by alternating current.

One especially horrific case occurred on the afternoon of October 11, 1889. Above a crowded intersection in midtown Manhattan, a repairman named John Feeks was cutting through dead wires when he accidentally touched a live one. The shock was so intense that it cast him into a net of cables. The conjunction of charges ignited his body, sending streaks of blue light from his feet, mouth, and nose. Blood dripped down to the street below as onlookers gaped in horrified wonder. The case was precisely what Edison needed to bolster his charges about AC's danger and thereby the superiority of his beloved DC.

As a competitive inventor, Edison was not about to let the future of direct current be dictated by chance, so he started a big public relations campaign against alternating current, attempting to generate public fear about the competing technology. He initially demonstrated the dangers of AC by directing his technicians to electrocute stray cats and dogs, and used this to show the potential risks of alternating current. As his next step, he secretly funded the development of an electric chair based on alternating current for the purposes of capital punishment. The first person ever to be executed in the electric chair, William Kemmler, was slowly cooked alive. Not Edison's finest moment, to be sure, but it was a very effective and rather frightening demonstration of the dangers of alternating current. But despite all of Edison's attempts to foil it, alternating current eventually prevailed.

Edison's folly is also a demonstration of how badly things can go when we become too attached to our own ideas because, despite the dangers of AC, it also had a much higher potential to power the world. Fortunately for most of us, our irrational attachments to our ideas rarely end as badly as Edison's.

Of course, the negative consequences of the Not-Invented-Here bias extend beyond the examples of a few individuals. Companies, in general, tend to create cultures centered around their own beliefs, language, processes, and products. Subsumed by such cultural forces, the people working within a company tend to naturally accept internally developed ideas as more useful and important than those of other individuals and organizations.*

If we think about organizational culture as an important component of the Not-Invented-Here mentality, one way to track this tendency might be to look at the speed in which acronyms blossom inside companies, industries, and professions. (For example, ICRM stands for Innovative Customer Relationship Management; KPI for Key Performance Indicator; OPR for Other People's Resources; QSC for Quality, Service, Cleanliness; GAAP for Generally Accepted Accounting Principles; SAAS for Software as a Service; TCO for Total Cost of Ownership; and so on). Acronyms confer a kind of secret insider knowledge; they give people a way to talk about an idea in shorthand. They increase the perceived importance of ideas, and at the same time they also help keep other ideas from entering the inner circle.

Acronyms are not particularly harmful, but problems arise when companies become victims of their own mythologies and adopt a narrow internal focus. Sony,

for example, had a long track record of highly successful inventions—the transistor radio, the Walkman, the Trinitron tube. After a long string of successes, the company drank its own Kool-Aid; "if something wasn't invented at Sony, they wanted nothing to do with it," wrote James Surowiecki in *The New Yorker*. Sony's CEO, Sir Howard Stringer, himself admitted that Sony engineers suffered from a damaging Not-Invented-Here bias. Even as rivals were introducing next-generation products that flew off shelves, such as the iPod and Xbox, the people at Sony did not believe that those outside ideas were as good as theirs. They missed opportunities on products such as MP3 players and flat-screen TVs, while investing their efforts in developing unwanted products, such as cameras that weren't compatible with the most popular forms of memory storage.[8]

Opposing Currents

The experiments we carried out to test the IKEA effect showed that when we make things ourselves, we value them more. Our experiments testing the Not-Invented-Here bias demonstrated that the same thing happens with our ideas. Regardless of what we create—a toy box, a new source of electricity, a new mathematical theorem—much of what really matters to us is that it is our creation. As long as we create it, we tend to feel rather certain that it's more useful and important than similar ideas that other people come up with.

Like many findings in behavioral economics, this, too, can be both useful and detrimental. On the positive side, if you understand the sense of ownership and pride that stems from investing time and energy in projects and ideas, you can inspire yourself and others to be more committed to and interested in the tasks at hand. It doesn't take much to increase a sense of ownership. Next time you unpack a manufactured item, look at the inspection tag; you might find someone's name proudly displayed on it. Or think about what might happen if you helped your kids plant vegetables in the garden. Chances are that if your kids grow their own lettuce, tomatoes, and cucumbers and help prepare them for a dinner salad, they will actually eat (and love) their veggies. Analogously, if I had run my presentation for the bankers less like a lecture and more like a seminar in which I asked them a series of leading questions, they might have felt that they had come up with the ideas on their own and hence adopted them wholeheartedly.

There's also a negative side to this, of course. For example, someone who understands how to manipulate another person's desire for ownership can lead an unsuspecting victim into doing something for him. If I wanted to make a few of my doctoral students work on a particular research project for me, I'd have only to lead them to believe that *they* came up with the idea, get them to run a small study, analyze the results—and voilà, they'd be hooked. And, as in Edison's case, the process of falling in love with our own ideas may lead to fixation. Once we are addicted to our own ideas, it is less likely that we will be flexible when necessary ("staying the course" is inadvisable in many cases). We run the risk of dismissing others' ideas that might simply be better than our own.

Like many other aspects of our interesting and curious nature, our tendency to overvalue what we create is a mixed bag of good and bad. Our task is to figure out how we can get the most good and least bad out of ourselves.

And now, if you don't mind, please sort the following words into a sentence and indicate how important you find this idea:

a basic important part and ourselves of irrationality is.

On a scale from 0 (not important at all) to 10 (very important) I find this idea to be _____ in terms of its importance.

Chapter 5
The Case for Revenge

What Makes Us Seek Justice?

In Alexandre Dumas' novel *The Count of Monte Cristo*, the protagonist, Edmond Dantès, spends many years suffering in prison under false charges. He eventually escapes and finds a treasure left to him by a fellow prisoner that transforms his life. Under an assumed identity as the Count of Monte Cristo, he uses every ounce of his wealth and wit to entrap and manipulate his betrayers, exacting terrible revenge on them and their families. After surveying the human wreckage in his wake, the count finally realizes that he has taken his desire for revenge too far.

Given the opportunity, most of us are generally more than happy to seek revenge, though few of us take it to the extremes that Dantès did. Revenge is one of the deepest-seated instincts we have. Throughout history, oceans of blood have been spilled and an endless number of lives ruined in an effort to settle scores—even when nothing good could possibly come of it.

But imagine this scenario: You and I live two thousand years ago in an ancient desert land, and I have a handsome young donkey that you want to steal. If you thought I was a rational decision maker, you might say to yourself, "It took Dan Ariely ten full days of digging wells to earn enough money to buy that gorgeous beast. If I steal it one night and escape to a faraway place, Dan will probably decide that it's not worth his time to chase me. Instead, he'll just take it as a business loss and go dig more wells in order to make enough money to buy a new donkey." But if you know that I'm not always rational and that in fact I'm the dark-souled, vengeful type who would chase you to the ends of the earth, take back not only my donkey but all of your goats, and leave you a bloody mess to boot—would you go ahead and steal my donkey? My guess is that you would not.

From this perspective, despite all the harm caused by revenge (and anyone who has ever gone through a bad breakup or divorce knows what I am talking about), it seems that the threat of revenge—even at great personal expense—can serve as an effective enforcement mechanism that supports social cooperation and order. Though I'm hardly recommending taking "an eye for an eye and a tooth for a tooth," I do suspect that, overall, the threat of vengeance can have a certain efficacy.*

What, exactly, are the mechanics and motivations underlying this primal urge? Under what circumstances do people want to take revenge? What drives us to spend our own time, money, and energy and even take risks just to make another party suffer?

The Pleasure of Punishment

To begin to understand how deeply the human desire for vengeance runs, I invite you to consider a study conducted by a group of Swiss researchers led by Ernst Fehr, who examined revenge using a version of an experimental game we call the Trust Game. Here are the rules, which are explained in detail to all participants.

You are paired with another participant. You are kept in separate rooms, and you will never know each other's identity. The experimenter gives each of you $10. You get to make the first move. You must decide whether to send your money over to the other participant or keep it for yourself. If you keep it, both of you get to keep your $10 and the game is over. However, if you send the other player your money, the experimenter quadruples the amount—so that the other player has their original $10 plus $40 (the $10 multiplied by four). The other player now has a choice: (a) to keep all the money, which means that they would get $50 and you would get nothing; or (b) to send half the money back to you, which means that each of you would end up with $25.*

The question, of course, is whether you will trust the other person. Do you send them the money—potentially sacrificing your financial gain? And will the other person justify your trust and share the earnings with you? The prediction of rational economics is very simple: no one would ever give back half of their $50, and, since this behavior is so glaringly predictable from a rational economic perspective, no one would ever send over their $10 in the first place. In this case, the simple economic theory is inaccurate: the good news is that people are more trusting and more reciprocating than rational economics would have us believe. Many people end up passing along their $10, and their partners often reciprocate by sending $25 back.

This is the basic trust game, but the Swiss version included another interesting step: if your partner chooses to keep all $50 for himself, you can use your own money to punish the bastard. For each dollar of your own hard-earned money that you give the experimenter, $2 will be extracted from your greedy partner. This means that if you decide to spend, say, $2 of your own money, your partner will lose $4, and if you decide to spend $25, your partner will lose all his winnings. If you were playing the game and the other person betrayed your trust, would you choose this costly revenge? Would you sacrifice your own money to make the other player suffer? How much would you spend?

The experiment showed that many of the people who had the opportunity to exact revenge on their partners did so, and they punished severely. Yet this finding was not the most interesting part of the study. While making their decisions, the participants' brains were being scanned by positron emission tomography (PET). This way, the experimenters could observe participants' brain activity while they were making their decisions. The results showed increased activity in the striatum, which is a part of the brain associated with the way we experience reward. In other words, according to the PET scan, it looked as though the decision to punish others was related to a feeling of pleasure. What's more, those who had a high level of striatum activation punished others to a greater degree.

All of this suggests that punishing betrayal, even when it costs us something, has biological underpinnings. And this behavior is, in fact, pleasurable (or at least elicits a reaction similar to pleasure).

THE URGE TO punish exists in animals, too. In an experiment carried out at the Institute for Evolutionary Anthropology in Leipzig, Germany, Keith Jensen, Josep Call, and Michael Tomasello wanted to find out whether chimpanzees had a sense of fairness. Their experimental setup called for putting two chimps in two neighboring cages and placing a table piled high with food within both their reach, just outside the cages. The table was equipped with roller wheels and a rope on each end. The chimps could grab the table and move it closer to or farther from their cage. The rope was connected to the bottom of the table. If a chimp pulled the rope, the table would collapse and all the food would spill onto the floor and out of reach.

When the researchers placed one chimp in one of the cages and left the other cage empty, the chimp pulled the table over, ate contentedly, and didn't pull the rope. However, things changed when a second chimp was put in a neighboring cage. As long as both chimps shared the food, all was well; but if one happened to roll the table very close to its own cage and out of the reach of the other chimp, the annoyed animal would often pull on the "revenge rope" and collapse the table. Not only that, but the researchers reported that when the table rolled away from them, the annoyed chimps exploded in rage, turning into screeching black furballs. The similarity between humans and chimps suggests that both have an inherent sense of justice and that revenge, even at personal expense, plays a deep role in the social order of both primates and people.

BUT THERE IS more to revenge than merely satisfying a personal desire to get back at the other guy. Revenge and trust are, in fact, opposite sides of the same coin. As we saw in the trust game, people are generally willing to put their faith in others, even in people they don't know and will never meet (this means that, from a rational economics point of view, people are too trusting). This basic element of trust is also why we get so upset when the social contract, founded on trust, is violated—and why under these circumstances we are willing to spend our own time and money, and sometimes take physical risks, to punish the offenders. Trusting societies have tremendous benefits over nontrusting societies, and we are designed to instinctively try to maintain a high level of trust in our society.

A LAWMAKER'S ANGER

The following excerpt of a letter from an anonymous lawmaker posted on the politically progressive Web site Open Left does a good job of describing the rage many people felt in response to the 2008 banking bailout:[9]

> Paulsen and congressional Republicans, or the few that will actually vote for this (most will be unwilling to take responsibility for the consequences of their policies), have said that there can't be any "add ons," or addition provisions. Fuck that. I don't really want to trigger a worldwide depression (that's not hyperbole, that's a distinct possibility), but I'm not voting for a blank check for $700 billion for those mother fuckers.
>
> Nancy [Pelosi] said she wanted to include the second "stimulus" package that the Bush Administration and congressional Republicans have blocked. I don't want to trade a $700 billion dollar giveaway to the most unsympathetic human beings on the planet for a few fucking bridges. I

want reforms of the industry, and I want it to be as punitive as possible.

Henry Waxman has suggested corporate government reforms, including CEO compensation, as the price for this. Some members have publicly suggested allowing modification of mortgages in bankruptcy, and the House Judiciary Committee staff is also very interested in that. That's a real possibility.

We may strip out all the gives to industry in the predatory mortgage lending bill that the House passed last November, which hasn't budged in the Senate, and include that in the bill. There are other ideas on the table but they are going to be tough to work out before next week. I also find myself drawn to provisions that would serve no useful purpose except to insult the industry, like requiring the CEOs, CFOs and the chair of the board of any entity that sells mortgage related securities to the Treasury Department to certify that they have completed an approved course in credit counseling. That is now required of consumers filing bankruptcy to make sure they feel properly humiliated for being head over heels in debt, although most lost control of their finances because of a serious illness in the family. That would just be petty and childish, and completely in character for me. I'm open to other ideas, and I am looking for volunteers who want to hold the sons of bitches so I can beat the crap out of them.

Rotten Tomatoes for Bankers

Not surprisingly, the desire for revenge struck many a citizen in the wake of the financial meltdown of 2008. As a result of the collapse of the mortgage-backed securities market, institutional banks fell like dominoes. In May 2008, JPMorgan Chase acquired Bear Stearns. On September 7, the government stepped in to rescue Fannie Mae and Freddie Mac. A week later, on September 14, Merrill Lynch was sold to Bank of America. The following day, Lehman Brothers filed for bankruptcy. The day after that (September 16), the U.S. Federal Reserve loaned money to AIG to prevent the company's collapse. On September 25, Washington Mutual's banking subsidiaries were partially sold to JPMorgan Chase, and the following day, Washington Mutual's holding company and remaining subsidiary filed for Chapter 11 bankruptcy.

On Monday, September 29, Congress voted against the bailout package proposed by President George W. Bush, resulting in a 778-point drop in the Dow Jones Industrial Average. And while the government worked to build a package that would pass, Wachovia became another casualty as it entered talks with Citigroup and Wells Fargo (the latter bought the bank on October 3).

When I looked around at the outraged public reaction to the $700 billion–plus bank bailout plan, it seemed as if people really wanted to bust the chops of the bankers who had flushed their portfolios down the toilet. One nearly apoplectic friend of mine promoted the idea of an old-fashioned solution: "Instead of taxing us to bail out those crooks," he ranted, "Congress should put them in wooden stocks, with their feet and hands and heads sticking out. I bet everyone in America would give big bucks for the joy of throwing rotten tomatoes at them!"

Now consider what transpired from the perspective of the trust game. We entrusted those bankers with our retirement funds, our savings, and our mortgages.

Essentially, they walked away with the $50 (you may want to put a few zeroes behind that). As a consequence, we felt betrayed and angry, and we wanted the bankers to pay dearly.

To set the economy right, the world's central banks tried to infuse money into the system, give short-term loans to banks, increase liquidity, buy back mortgage-backed securities, and every other trick in the book. But these extreme measures did not achieve the desired effect in terms of economic recovery, especially if you consider the relatively pitiful impact that the massive injection of money actually had on restoring the economy.* The public remained livid, because the central issue of rebuilding trust was neglected. In fact, I suspect that the public trust was further eroded by three things: the version of the bailout legislation that eventually passed (which involved multiple unrelated tax cuts); the outrageous bonuses paid to people in the financial industry; and the back-to-business-as-usual attitude on Wall Street.

Customer Revenge: My Story, Part I

When our son, Amit, was three years old and Sumi and I were expecting our second child, Neta, we decided to buy a new family car and ended up with a small Audi. It was not a minivan, but it was red (the safest color!) and a hatchback (versatile!). Moreover, the company had a reputation for great customer service, and the car came with four years of free oil changes. This little Audi felt great—it was peppy and stylish, it handled well, and we loved it.

We were living in Princeton, New Jersey, at the time, and the distance from our apartment at the Institute for Advanced Study to Amit's day care was two hundred yards. The distance to my office was about four hundred yards, so driving opportunities were limited to occasional grocery-shopping trips and my bimonthly visits to MIT in Cambridge, Massachusetts. On the nights before I was due at MIT, I would usually leave Princeton at about 8:00 P.M. in order to avoid the traffic, and I would arrive in Cambridge sometime after midnight; on the way back to Princeton, I followed the same procedure.

On one such occasion, I left MIT at about 8:00 P.M. with Leonard Lee, a colleague from Columbia University whose visit to Boston coincided with mine. Leonard and I hadn't had a lot of time to talk over the previous few months, so we were both looking forward to the ride. About an hour into our journey, I was driving about seventy miles per hour in the left-hand lane on the busy Massachusetts Turnpike when, all of a sudden, the engine stopped responding to the gas pedal. I let my foot off the pedal and pressed it again. The car revved in response, but there was no change in speed. It was as if we were coasting in neutral.

The car was losing speed fast. I switched on the right-turn signal and looked over my right shoulder. Two eighteen-wheeler trucks, one after the other, were bearing down on me and seemed unimpressed with my signaling. There was no way to get over. After the trucks passed, I tried to push my way into the right lane, but the distance Boston drivers generally maintain from the car in front of them is visible only with a good microscope.

Meanwhile, my typically chatty, smiling colleague was noticeably unchatty and unsmiling. When the speed of the car dropped to 30 mph, I finally managed to push my way into the right lane and from there onto the shoulder, my heart in my

throat. I didn't make it all the way to the extreme right because the car had lost all of its speed, but at least we were out of the driving lanes.

I turned the car off, waited a few minutes, and then tried to restart it to see whether the transmission would engage. It would not. I opened the hood and gazed at the engine. When I was younger, I could make sense of a car engine. In the old days, you could see the carburetor, the pistons, the spark plugs, and some of the hoses and belts; but this new Audi had a big block of metal with no visible parts. So I gave up and called roadside assistance. An hour later, we were towed back to Boston.

In the morning, I called Audi customer service and described the experience, as vividly and graphically as I could, to the customer service representative. I went into fine detail about the trucks, the fear of not being able to make it off the highway, the fact that I had a passenger whose life was in my hands, and the difficulty of navigating a car without a functioning engine. The woman on the other end of the line sounded as if she were reading from a script. "I am sorry about your inconvenience," she sniffed.

Her tone made me want to grab her throat through the phone line. Here I was, having had what felt like a near-death experience—not to mention having had a five-month-old car break down on me—and the best description she could come up with for the ordeal was "inconvenience." I could just see her sitting there, filing her fingernails.

The subsequent dialogue went something like this:

SHE: Are you currently in your hometown?
ME: No. I currently live in New Jersey, and I am stuck in Massachusetts.
SHE: Strange. Our records indicate that you live in Massachusetts.
ME: I usually live in Massachusetts, but I am spending two years in New Jersey. Also, I purchased the car in New Jersey.
SHE: We have a reimbursement policy for people who get stuck out of town. We can pay their flight or train ticket to help them get back home. But since our records show that you live in Massachusetts, you are not eligible for any of these.
ME *(voice rising)*: You mean to tell me that it is my fault that your record-keeping is faulty? I can provide all the proof you want that I'm now living in New Jersey.
SHE: Sorry. We go by our records.
ME *(deciding not to push the point for the sake of getting my car fixed quickly)*: What about my car?
SHE: I will call the dealership and keep you posted.

Later that day, I learned that it would take the dealership at least four days to even look at my car. I rented a car, and Leonard and I struck out again—this time with more success.

I called Audi customer service two or three times each week over the next month, talking with customer service representatives and supervisors of all levels, asking each time for more information about the state of my car, to no good effect. After each call, my mood took a turn for the worse. I realized three things: that something very bad had happened to my car; that Audi customer service was going

to take as little responsibility as possible; and that from then on, I would not be able to enjoy driving my car in the same way because my experience was now tainted by a lot of negative feelings.

I have a friend in the district attorney's office in Massachusetts who gave me the regulations for the "lemon law."* So I called Audi's customer service in order to talk to the people there about it. The person on the other end of the phone was surprised to learn that there was something called a lemon law. She invited me to pursue a legal recourse (I could imagine her smiling and thinking "And our lawyers will be very pleased to engage your lawyer in a long and costly process").

After that conversation, it was clear that I didn't stand a chance. Hiring a lawyer to resolve the dispute would cost me much more than simply selling the car and accepting the loss. About a month after the car originally broke, it was finally fixed. I drove the rental car back to Boston, got into my Audi, and returned to Princeton with much less joy than usual. I felt helpless and frustrated by the whole experience. Of course I was disappointed that the car had broken down in the first place, but I also understood that cars are mechanical things that break from time to time—there's nothing much to be done about it. It just happened that I'd had the bad luck to buy a defective car. What really annoyed me was the way I was treated by the people in customer service. Their clear lack of concern and their strategy of playing a game of attrition with me angered me. I wanted the people at Audi to feel some pain as well.

Don't Touch That Phone

Later on, I had a wonderful venting session with one of my good friends, Ayelet Gneezy (a professor at the University of California at San Diego). She understood my desire to get back at Audi and suggested that we look into the phenomenon together. We decided to carry out some experiments on consumer revenge, hoping that in the process we would be able to better understand our own vengeful feelings and behavior.

Our first task was to create experimental conditions that would make our participants want to take revenge against us. That doesn't sound like a good thing, but we needed to do it to measure the extent of vengeful behavior. The ideal setup for such an experiment would be to re-create a high level of customer annoyance—something like my Audi customer service story. Though Audi seemed very happy to annoy me, we suspected that it would not be willing to annoy half the people who called its customer support line and not annoy the other half—just to help with our research project. So we had to try to set up something analogous.

Though in some ways it would have been nice—for experimental reasons—to create a dramatic irritation for our participants, we didn't want people to go to jail or blood to be spilled—especially ours. Not to mention that it would be at least slightly unethical to subject participants to substantial emotional duress for the purpose of studying revenge. For research reasons, we also preferred an experiment that would involve only a low level of consumer annoyance. Why? Because if we could establish that even a low level of irritation is sufficient to make people feel and act vengeful, we could extrapolate that in the real world, where annoying actions can be much more potent, the probability of vengeance would be much higher.

We had lots of fun coming up with ways to annoy people. We contemplated having the experimenter eat garlic and breathe on the participants while explaining a task, spill something on them, or step on their toes. Eventually, though, we decided to have the experimenter pick up his cell phone in the middle of explaining a task, talk to someone else for a few seconds, hang up, and, without acknowledging the interruption, continue explaining the task to them from the place where he had left off. We figured that this was less invasive and unsanitary than our other ideas.

So we had our annoyance of choice, but what opportunity for revenge would we give participants, and how would we measure it? We can divide the types of vengeful acts into two classes that we call "weak" and "strong." Weak revenge is the type that falls within acceptable moral and legal behavioral norms, as when I complain loudly to neighbors and friends (and you, dear reader) about Audi's abysmal customer service. It is perfectly okay to behave this way, and no one will say that I have sidestepped any norms when expressing myself. Revenge becomes strong when one strays beyond the acceptable norms to inflict revenge upon the offending party, in the form of, say, breaking a window, creating some physical damage, or stealing from the offending party. We decided to go for the strong revenge type, and here is what we came up with.

Daniel Berger-Jones, age twenty, talented, bright, and good-looking (tall, dark-haired, broad-shouldered, and blessed with a swashbuckling scar on his left cheek). An unemployed acting student at Boston University, he was exactly what we were looking for. Ayelet and I hired Daniel for the summer to annoy people in the ubiquitous Boston coffee shops. Being a good actor, Daniel could easily irritate people while maintaining a charmingly straight face; he could also repeat his performances consistently, time after time.

Having established himself in a coffee shop, Daniel watched for people entering alone. After they'd settled into a chair with their drink, he approached them and said, "Excuse me, would you be willing to participate in a five-minute task in return for five dollars?" Most people were delighted to do so, since the $5 would more than cover the cost of their coffee. When they agreed, Daniel handed them ten sheets of paper covered with random letters (much like the ones we used in the letters experiment described in chapter 2, "The Meaning of Labor").

"Here's what I'd like you to do," he would instruct each person. "Find as many adjacent *S*s as possible and circle them. If you finish all the letter pairs in one sheet, move on to the next one. Once the five minutes are up, I will come back, collect the sheets, and pay you the five dollars. Do you have any questions?"

Five minutes later, Daniel would return to the table, collect the sheets, and hand the participants a small stack of $1 bills, along with a prewritten receipt that read:

I, _____, received $5 for participating in an experiment.

(name here)

Signature: _____ Date: _____

"Please count the money, sign the receipt, and leave it on the table. I'll be back to collect it later," Daniel said. Then he left to look for another eager participant.

This was the control, the no-annoyance condition.

Another set of customers—those in the annoyance condition—experienced a slightly different Daniel. In the midst of explaining the task, he pretended that his cell phone was vibrating. He reached into his pocket, took out the phone, and said, "Hi, Mike. What's up?" After a short pause, he would enthusiastically say, "Pizza tonight at eight thirty. My place or yours?" Then he would end his call with "Later." The whole fake conversation took about twelve seconds.

After Daniel slipped the cell phone back into his pocket, he made no reference to the disruption and simply continued describing the task. From that point on, everything was the same as in the control condition.

We expected the people who experienced the phone call interruption to be more annoyed and more willing to seek revenge, but how did we measure the extent to which they sought it? When Daniel handed all the participants the stack of bills, he told them, "Here is your five dollars. Please count it and sign the receipt." But in fact, he always gave them too much money, as if by mistake. Sometimes he gave them $6, sometimes $7, and sometimes $9. We were interested in finding out whether the participants, thinking that they were overpaid by mistake, would exhibit strong revenge by violating a social norm (in this case, keeping the extra change) or give it back. We particularly wanted to measure the extent to which people would keep the extra cash would increase following the twelve-second phone interruption—which would give us our measure of revenge. We also chose this approach because it was similar to the revenge opportunities people have every day. Imagine you go to a restaurant and discover that the server made some mistake with the bill—do you let him know or keep the loot? And what if the server has annoyed you? Would you be even more likely to turn a blind eye to the mistake?

Faced with this basic dilemma, what did our participants do? The amount of extra money participants received ($1, $2, or $4) had no impact on their tendency to turn a blind eye to the extra cash. Daniel's taking the phone call in the midst of instructing them, however, made a big difference. A mere 14 percent of the participants who experienced Daniel's rude side returned the additional money, compared to 45 percent of those in the no-annoyance condition. The fact that only 45 percent of people returned the extra cash even when they were not annoyed is a sad state of affairs, to be sure. But it was truly disturbing that a twelve-second phone call vastly decreased the likelihood that the participants would return the cash to the point where just a small minority of people made the honest choice.

The Very Bad Hotel and Other Stories

Amazingly, I discovered I am not the only human who has taken offense after being mistreated by customer representatives. Take the businessmen Tom Farmer and Shane Atchison, for example. If you search for them on the Internet, you will find an amusing presentation called "Yours Is a Very Bad Hotel,"[10] an interesting PowerPoint act of comeuppance against the management of the Doubletree Club hotel in Houston.

One cold night in 2001, the two businessmen showed up at the hotel, where they had guaranteed and confirmed reservations. Sadly, upon arrival, they were told that the hotel was overbooked and that there was only one room available,

but it was off limits due to air-conditioning and plumbing problems. Though the news was obviously annoying, what really irritated Farmer and Atchison was the nonchalant attitude of Mike, the night clerk.

Mike failed to make any effort to find them alternate accommodations or help them in any way. In fact, his rude, unapologetic, and dismissive behavior infuriated Farmer and Atchison far more than the problem with the room itself. Since Mike was the service representative, they felt it was his job to demonstrate some compassion, and when he didn't, they got mad and got even. Like all good consultants, they prepared a PowerPoint presentation. Theirs described the sequence of events—complete with humorous quotes from "Night Clerk Mike." They included the calculated potential income that his incompetence would cost the hotel chain, along with the likelihood that they would ever return to the Doubletree Club hotel.

For example, in slide 15 of their presentation, entitled "We Are Very Unlikely to Return to the Doubletree Club Houston," Tom and Shane describe their probability of ever going back:

WE ARE VERY UNLIKELY TO RETURN TO THE DOUBLETREE CLUB HOUSTON

- Lifetime chances of dying in a bathtub: 1 in 10,455
  (National Safety Council)
- Chance of Earth being ejected from the solar system by the gravitational pull of a passing star: 1 in 2,200,000
  (University of Michigan)
- Chance of winning the UK Lottery: 1 in 13,983,816
  (UK Lottery)
- Chance of us returning to the Doubletree Club Houston: worse than any of those
  (And what are the chances you'd save rooms for us anyway?)

The businessmen e-mailed the file to the general manager of the Doubletree Club hotel and their clients in Houston. After that, the presentation enjoyed viral fame on the Internet. In the end, Doubletree offered to make amends with Farmer and Atchison. The two asked only that Doubletree fix the customer service problem, which it reportedly did.

ANOTHER REVENGE STORY with a relatively good ending is that of the Neistat brothers, who created a video detailing their experience with Apple's customer service. When one of the brothers' iPod batteries died and they called to ask about a replacement, the customer service representative told them that since he'd had the iPod for more than the year of warranty, there would be a charge of $255, plus a mailing fee, to fix it. And then he added, "But at that price, you know, you might as well go get a new one."

In response, the brothers spray-painted the words "**IPOD'S UNREPLACEABLE**

BATTERY LASTS ONLY 18 MONTHS" onto all the multicolored iPod posters they could find on the streets of New York City. They also filmed their experience and posted it as "iPod's Dirty Secret" on YouTube and other Web sites. Their actions forced Apple to change its policy about battery replacement. (Unfortunately, Apple continues to make iPods and iPhones with batteries that are difficult to replace.)*

Of course, the sine qua non of terrible customer service in the public consciousness is the airline business. Flying can often be a hostility-building exercise. On the security side, there are those invasive scans, including pat-downs of old ladies with hip replacements. We must take off our shoes and make sure our toothpaste, moisturizer, and other liquid items are limited to three ounces each and fit into a quart-sized, clear Ziploc bag. And, of course, there are countless other annoyances and frustrations including long lines, uncomfortable seats, and flight delays.

Over the years, airlines have started charging for just about everything, packing flights with as many seats and people as possible, leaving space between seats that are comfortable only for a small child. They charge for checked bags, water, and in-flight snacks. They've even optimized airtime by getting planes to spend more time in the air and less time on the ground, and, as a consequence, guess what happens when there is one delay? You got it—a long sequence of delays across numerous airports that are all attributed to bad weather somewhere ("Not our fault," says the airline). As a result of all of these injuries and insults, passengers often feel angry and hostile, and express their frustration in all kinds of ways.

One such flying revenge seeker made me suffer on a flight from Chicago to Boston. On boarding the flight, I had the pleasure of being seated in a middle seat, 17B, stuffed between two hefty individuals who were spilling into my seat. Soon after takeoff, I reached for the airline magazine in the seat pocket. Instead of feeling the firm touch of paper, I felt a cold glob of what might politely be called leftovers. I took my hand out and squeezed my way out of the seat to the toilet in order to wash my hands. There I found the surfaces covered with toilet paper, the floor wet with urine, and the soap dispenser empty. The passengers on the previous flight, as well as the one whose seat I was now occupying, must have been angry indeed (this feeling might have also infected the cleaning and maintenance crew). I suspect that the person who left me the wet gift in the seat pocket, as well as the passengers who messed up the toilet, did not hate me personally. However, in their attempt to express their anger at the airline, they took out their feelings on other passengers, who were now more likely to take further revenge.

Look around. Do you notice a general revenge reaction on the part of the public in response to the increase of bad treatment on the part of companies and institutions? Do you encounter more rudeness, ignorance, nonchalance, and sometimes hostility in stores, on flights, at car rental counters, and so on than ever before? I am not sure who started this chicken-and-egg problem, but as we consumers encounter offensive service, we become angrier and tend to take it out on the next service provider—whether or not he or she is responsible for our bad experience. The people receiving our emotional outbursts then go on to serve other customers, but because they are in a worse mood themselves, they aren't in a position to be courteous and polite. And so goes the carousel of annoyance, frustration, and revenge in an ever-escalating cycle.

Agents and Principals

One day, Ayelet and I went to lunch to talk about the experiments involving Daniel and his cell phone. A young waitress, barely out of her teens and seeming particularly distracted, took our order. Ayelet ordered a tuna sandwich and I asked for a Greek salad.

Several minutes later the waitress reappeared, bearing a Caesar salad and a turkey sandwich. Ayelet and I looked at each other and then at her.

"We didn't order these," I said.

"Oh, sorry. I'll just take them back."

Ayelet was hungry. She looked at me, and I shrugged. "It's okay," she said. "We'll just eat these."

The waitress gave us a despairing look. "I'm sorry," she said and then disappeared.

"What if she makes a mistake on our bill and undercharges us?" Ayelet asked me. "Would we tell her about this mistake, or would we take revenge and not say anything?" This question was related to our first experiment, but it was also different in one important way. If the question was about the size of the tip we would leave the waitress, then the issue would be simple: she was the person offending us a bit (the principal in economics-speak), and as a punishment we would tip her a bit less. But a mistake on the bill would cost the restaurant, and not the waitress, in reduced revenues; in terms of the bill, the waitress was the agent, while the restaurant was the principal. If we detected a mistake in our bill but didn't call attention to it because we were annoyed with her performance, the principal would pay for the mistake of the agent. Would we take revenge against the principal even if the mistake was the agent's fault? And "what if," we asked ourselves, "the waitress owned the restaurant?" In that case she would be both the principal and the agent. Would that situation make us more likely to take revenge against her?

Our speculation was that we would be much less likely to take revenge against the restaurant/principal if the waitress were just an agent and much more likely not to report the billing mistake if she were the principal. (In the end, there was no mistake on the bill, and though we were unhappy with the waitress's service, we tipped her 15 percent anyway.) The idea that the distinction between agents and principals would make a difference in our tendency to take revenge looked reasonable to us. We decided to put our intuition to the test and study this problem in more detail.

Before I tell you what we did and what we found, imagine going into a corporate-owned clothing store one day and encountering a very annoying salesperson. She stands behind the counter, yakking with a colleague about the latest episode of *American Idol*, while you try to get her attention. You're more than miffed by the fact that she's ignoring you. You think about leaving, but you really like the shirts and sweater you've picked out, so in the end you toss down your plastic. Then you notice that the salesperson mistakenly forgets to scan the price of the sweater. You realize that underpaying will penalize the owner of the store (principal) and not the salesperson (agent). Do you keep quiet, or do you point out her mistake?

Now consider a slightly different case: You go to a privately owned clothing store, and here, too, you meet an annoying salesperson, who also happens to be

the owner. Again, you have a chance to get a "free" sweater. In this case, the principal and the agent are the same person, and so not mentioning the omission would punish both. What would you do now? Would it make a difference if the person suffering from your revenge was also the one responsible for your anger?

THE SETUP FOR our next experiment was similar to the previous one in the coffee shop. But this time around, Daniel introduced himself to some of the coffee drinkers by saying "Hello, I've been hired by an MIT professor to work on a project." In this condition, he was the agent, equivalent to the waitress or salesperson, and if an annoyed person decided to keep the extra cash, he would be hurting the principal (me). To other participants, Daniel said, "Hello, I'm working on my undergraduate thesis project. I'm paying for this project with my own funds." Now he was the principal, like the owner of the restaurant or the store. Would the coffee-drinking Beantownies be more likely to seek revenge when their action would punish Daniel himself? Would they react in a similar way regardless of who got hurt?

The results were depressing. As we had discovered in our first experiment, people who were annoyed by the phone call were much less likely to return the extra cash than those whose conversations were uninterrupted. More surprisingly, we found that the tendency to seek revenge did not depend on whether Daniel (the agent) or I (the principal) suffered. This reminded us of Tom Farmer and Shane Atchison. In their case too they were annoyed mostly with Mike, the night clerk (an agent), but their PowerPoint presentation was aimed mostly at the Doubletree Club hotel (the principal). It seems that at the moment we feel the desire for revenge, we don't care whom we punish—we only want to see someone pay, regardless of whether they are the agent or the principal. Given the number of agent-principal dualities in the marketplace and the popularity of outsourcing (which further increases these dualities), we thought this was indeed a worrisome result.

Customer Revenge: My Story, Part II

We have learned that even relatively simple transgressions can ignite the instinct for revenge. Once we feel the need to react, we often don't distinguish between the person who actually made us angry and whoever suffers the consequences of our retaliation. This is very bad news for companies that pay lip service (if that) to customer support and service. Acts of revenge are not easy to observe from the CEO's office. (And when engaging in acts of strong revenge, consumers try very hard to keep their actions under cover.) I suspect that companies like Audi, Doubletree, Apple, and many airlines don't have a clue about the cause-and-effect relationship between their offending behavior and the retaliatory urges of their annoyed customers.

So how did I express my revenge to Audi? I have seen many amusing YouTube videos in which people vent about their problems, but that approach did not suit me. Instead, I decided to write a fictional case study for the well-known business magazine *Harvard Business Review* (*HBR*). The story was about a negative experience that Tom Zacharelli had with his brand-new Atida car (I made up "Atida" and used Tom Farmer's first name; notice, too, the similarity between

"Ariely" and "Zacharelli"). Here is the letter Tom Zacharelli wrote to the CEO of Atida:

Dear Mr. Turm,

I am writing to you as a longtime customer and former Atida fan who is now close to desperation. Several months ago, I purchased the new Andromeda XL. It was peppy, it was stylish, it handled well. I loved it.

On September 20, while I was driving back to Los Angeles, the car stopped responding to the gas. It was as if we were driving in neutral. I tried to make my way to the right. Looking over my right shoulder, I saw two big trucks bearing down on me as I tried to move over. The drivers barely missed me, and somehow I managed to make it onto the shoulder alive. It was one of the most frightening experiences of my life.

From there the experience only got worse thanks to your customer service. They were rude, unhelpful and they refused to reimburse me for my expenses. A month later I got my car back, but now I'm angry, spiteful, and I want you to share in my misery. I feel the need for revenge.

I'm now seriously thinking of making a very slick and nasty little film about your company and posting it on YouTube. I guarantee you won't be happy with it.

Sincerely,

Tom Zacharelli

The main question posed by my *HBR* case was this: how should Atida Motors have reacted to Tom's anger? It was not clear that the manufacturer had any legal obligation to Tom, and the company's managers wondered whether they should ignore or appease him. After all, they asked, why would he be willing to spend additional time and effort on making a video that would reflect poorly on Atida Motors? Hadn't he spent enough time dealing with his car issues already? Didn't he have anything better to do? As long as Atida made it clear that it was not going to take one little step toward appeasing him, why would he want to waste his time taking revenge?

My *HBR* editor, Bronwyn Fryer, asked four experts to reflect on the case. One was none other than Tom Farmer of "Yours Is a Very Bad Hotel" fame, who, not surprisingly, censured Atida and took Tom Zacharelli's side. He opened his comment with the statement that "whether the company knows it or not, Atida is a service organization that happens to sell cars, not a car-making organization that happens to provide service."

In the end, all four reviewers thought that Atida had treated Tom poorly and that he had the potential to do a lot of damage with his threatened video. They also suggested that the potential benefits of making amends with one understandably upset customer outweighed the cost.

When the case study appeared in December 2007, I mailed a copy to the head of customer service at Audi with a note saying that this article was based on my experience with Audi. I never heard back from him, but I now feel better about the whole thing—though I am not sure whether that's because I took revenge or because enough time has passed since the incident.

The Power of Apologies

When I finally got my car, the head mechanic gave me the keys. As we parted, he said, “Sorry, but sometimes cars break.” The simple truth of his statement had a surprisingly calming effect on me. “Yes,” I said to myself, “cars do break. This is not a surprise, and there is no reason to get so upset about it, just as there is no reason to get upset when my printer jams.”

So why did I get so angry? I suspect that if the customer service representative had said, “Sorry, but sometimes cars break,” and had showed me some sympathy, the whole sequence would have played out very differently. Could it be that apologies can improve interactions and soothe the instinct for revenge in business and in personal exchanges?

Given my frequent personal experience apologizing to my lovely wife, Sumi, and given that it often works well for me (Ayelet is basically a saint, so she never needs to apologize for anything), we decided in the next iteration to examine the power of the word “sorry.”

Our experimental setup was very similar to that of the original experiment. Again, we sent Daniel to ask coffee shop customers if they would complete our letter-pairing task in exchange for $5. This time, however, we had three conditions. In the control (no-annoyance) condition, Daniel first asked the coffee shop patrons if they would be willing to participate in a five-minute task in return for $5. When they agreed (and almost all agreed), he gave them the same letter sheets and explained the instructions. Five minutes later, he returned to the table, collected the sheets, handed the participants four extra dollars (four $1 bills and one $5 bill), and asked them to fill out a receipt for $5. For those in the annoyance condition, the procedure was basically the same, except that while going over the instructions, Daniel again pretended to take a call.

The third group was basically in the same condition as those in the annoyance group, but we threw in a little twist. This time, as Daniel was handing the participants their payment and asking them to sign the receipt, he added an apology. “I’m sorry,” he said, “I shouldn’t have answered that call.”

Based on the original experiment, we expected the annoyed people to be much less likely to return the extra cash, and indeed that is what the results showed. But what about the third group? Surprise!—the apology was a perfect remedy. The amount of extra cash returned in the apology condition was the same as it was when people were not annoyed at all. Indeed, we found that the word “sorry” completely counteracted the effect of annoyance. (For handy future reference, here’s the magic formula: 1 annoyance + 1 apology = 0 annoyance.) This showed us that apologies do work, at least temporarily.

Before you decide it’s okay to start acting like a jerk and saying “sorry” immediately after you annoy someone, a word of caution is in order. Our experiment was a onetime interaction between Daniel and the coffee shop customers. It is unclear what would have happened if Daniel and the customers had gone through the experiment and apology for many days in a row. As we know from the story of “The Boy Who Cried ‘Wolf,’ ” it’s possible to overuse a word, and an overworn “sorry” may well lose its power.

We also discovered one other remedy for the revenge that the coffee drinkers in Boston took against us. As it turned out, increasing the time between Daniel’s disrespectful phone call and the participants’ opportunity for revenge (when he

gave them the payment and asked them to sign a receipt), even by fifteen minutes, muted some of the vengeful feelings and got us more of our money back. (Here, too, a word of caution is important: when annoyance is very high, I am not sure that simply letting some time pass is sufficient to eliminate the urge for revenge.)

If You're Tempted

A number of wise men have warned us against the would-be benefits of vengeance. Mark Twain said, "Therein lies the defect of revenge: it's all in the anticipation; the thing itself is a pain, not a pleasure; at least the pain is the biggest end of it." Walter Weckler further observed that "revenge has no more quenching effect on emotions than salt water has on thirst." And Albert Schweitzer noted that "Revenge . . . is like a rolling stone, which, when a man hath forced up a hill, will return upon him with a greater violence, and break those bones whose sinews gave it motion."

WHEN DOCTORS APOLOGIZE

As much as some people seem to think otherwise, physicians are in fact human and do make mistakes from time to time. When this happens, what should they do? Is it better for them to admit medical errors and apologize? Or should they deny their mistakes? The reasoning behind the latter is clear: in a litigious society, a doctor who comes clean is much more likely to lose a lawsuit if one is filed. But on the other hand, you could argue that a doctor's apology can placate the patient and thereby lower the likelihood that he might be sued in the first place.

It turns out that in the battle between humility and bedside manners on one side and a calculating, legalistic approach on the other, saying "sorry" often wins the day. For example, when researchers at the Johns Hopkins Bloomberg School of Public Health in Baltimore[11] showed participants videos of doctors responding to medical errors, participants rated the doctors who expressed an apology and who took personal responsibility far more favorably. What's more, another research team from the University of Massachusetts Medical School found that people expressed less interest in suing doctors who had assumed responsibility, apologized, and planned a means of avoiding the error in the future.[12]

Now, if you are a surgeon who operates on the wrong knee or leaves a tool inside a patient's body, an apology makes a lot of sense. Your patient might not feel so outraged and won't have a desire to stomp into your office, kick you with his good leg, and throw your favorite paperweight through the window. It may also make you appear much more human and keep you from getting sued. In line with these findings, many medical voices are now suggesting that physicians should be encouraged to apologize and admit when they are wrong. But of course denying our mistakes and blaming others is a part of being human—even when doing so can escalate the anger and revenge cycle.

With all this good advice about not engaging in revenge, is it really something we can avoid? For my part, I think that the desire for revenge is one of the most basic of human responses; it's linked to our incredible ability to trust others, and since it's a part of our nature, it's a difficult instinct to overcome. Maybe we can adopt a more Zen-like approach to life. Maybe we can take the long-term view. Maybe we can count to ten—or ten million—and let the passage of time help us.

Most likely, such steps offer only slight mitigation of what is sadly an all-too-common feeling. (For another tour of the dark side of our emotions, see chapter 10, "The Long-Term Effects of Short-Term Emotions.")

When we can't fully suppress our vengeful feelings, perhaps we can figure out how to blow off steam without incurring negative consequences. Maybe we can prepare a laminated sign that reads "HAVE A NICE DAY" in large letters on one side and "f**k you" in much smaller letters on the other side. We can keep this sign in the glove compartment of our car, and when someone drives too fast, cuts into our lane, or generally endangers us with their driving, we can show the driver the sign through our window, with the "HAVE A NICE DAY" side facing them. Maybe we can write down vengeful jokes about an offending party and post them anonymously on the Web. Maybe we can vent with some of our friends. Maybe we can make a PowerPoint presentation about the event or write a case study for the *Harvard Business Review*.

Useful Revenge

Other than my near brush with death on the highway, I'd say that my experience with Audi was overall beneficial. I got to reflect on the phenomenon of revenge, do a few experiments, share my perspective in print, and write this chapter. Indeed, there are many success stories built on the motivation for revenge. These stories often involve entrepreneurs and businessmen, whose self-worth is tightly bound to their work. When they are ousted from their positions as CEOs or presidents, they make revenge their life's mission. Sometimes they succeed in either regaining their former position or creating a new and successful competitor to their former company.

Near the end of the nineteenth century, for example, Cornelius Vanderbilt owned a steamship company called Accessory Transit Company. Everything was going well for him until he decided to vacation in Europe on his yacht. When he returned from his trip, he found that the two associates he had left in charge had sold his interest in the company to themselves. "Gentlemen, you have undertaken to cheat me. I won't sue you, for the law is too slow. I'll ruin you," he said. Then he converted his yacht into a passenger ship and started a rival company, aptly named "Opposition." Sure enough, his new company quickly succeeded and Vanderbilt eventually regained control of his first company. Though Vanderbilt's company was larger, it contained at least two fewer questionable employees.[13]

Here's another revenge success story:[14] after being fired from the Walt Disney Company, Jeffrey Katzenberg not only won $280 million in compensation; he cofounded DreamWorks SKG, a Disney competitor that went on to release the highly successful movie *Shrek*. Not only did the movie make fun of Disney's fairy tales, but its villain is also apparently a parody of the head of Disney at the time (and Katzenberg's former boss), Michael Eisner. Now that you know Shrek's background, I recommend you revisit the movie to see just how constructive (and entertaining) revenge can be.

Part II

The Unexpected Ways We Defy Logic at Home

Chapter 6
On Adaptation

Why We Get Used to Things (but Not All Things, and Not Always)

Man is a pliant animal, a being who gets accustomed to anything.
—Fyodor Dostoyevsky

The late nineteenth century was a rough time for frogs, worms, and a number of other creatures. As the study of physiology blossomed in Europe and America (thanks in part to Charles Darwin), scientists went wild dividing, dismembering, and relocating these unfortunate subjects. According to scientific legend, they also slowly heated some of the animals in order to test the extent to which they could adapt to changes in their environments.

The most famous example of this kind of research is the apocryphal story of the frog in boiling water. Supposedly, if you place a frog in a pot of very hot water, it will scramble around and quickly leap out. However, if you put one in a pot of room-temperature water, the little guy will stay there contentedly. Now, if you slowly increase the temperature, the frog will stay put as it acclimates to the rising change in temperature. And if you continue to turn up the heat, the frog will eventually boil to death.

I can't say for sure if this frog experiment works since I've never tried it (and I suspect the frog would, indeed, jump out), yet the boiling-frog story is the quintessence of the principle of adaptation. The general premise is that all creatures, including humans, can get used to almost anything over time.

The frog story is usually used pejoratively. Al Gore has found it a handy analogy for pointing out people's ignorance about the effects of global warming. Others have used it to warn about the slow erosion of civil liberties. Business and marketing people use it to illustrate the point that changes in products, services, and policies—such as price increases—must be gradual, so that customers have time to adjust to them (preferably without noticing). This analogy to adaptation is so common, in fact, that James Fallows of *The Atlantic* argued, in a Web column called "Boiled-frog Archives," that "Frogs have a hard enough time as it is, what with diminishing swampland and polluted waters. Political rhetoric has its problems too. For the frogs' sake, and that of less-idiotic public discourse, let's retire this stupid canard, or grenouille."[15]

In fact, frogs are remarkably adaptive. They can live in water and on land, they change their colors to blend in with their environments, and some even mimic their toxic cousins in an effort to scare off predators. Humans, too, have an amazing ability to adapt physically to their environments, from the frigid, barren Arctic to scorching, arid deserts. Physical adaptation is a much-touted skill on

mankind's collective résumé.

To get a better view of the wonders of adaptation, let's consider the way that our visual system functions. If you've ever gone to a matinee and walked from the dark movie theater to the sunny parking lot, the first moment outside is one of stunning brightness, but then your eyes adjust relatively quickly. Moving from a dark theater into bright sunshine demonstrates two aspects of adaptation. First, we can function well in a large spectrum of light intensities, ranging from broad daylight (where luminance can be as high as 100,000 lux) to sunset (where luminance can be as low as 1 lux). Even with the light of the stars (where luminance can be as low as 0.001 lux), we can function to some degree. Second, it takes a little bit of time for our eyes to adjust. When we first move from darkness to light, we are unable to open our eyes fully, but after a few minutes we get used to the new environment and can function in it perfectly. In fact, we acclimate so readily that after a while we barely notice the intensity of the light around us.

Our ability to adapt to light is just one example of our general adaptive skills. The same process takes place when we first encounter a new smell, texture, temperature, or background noise. Initially, we are very aware of these sensations. But as time passes, we pay less and less attention to them until, at some point, we adapt and they become almost unnoticeable.

The bottom line is that we have only a limited amount of attention with which to observe and learn about the world around us—and adaptation is a very important novelty filter that helps us focus our limited attention on things that are changing and might therefore pose either opportunities or danger. Adaptation allows us to attend to the important changes among the millions that occur around us all the time and ignore the unimportant ones. If the air smells the same as it has for the past five hours, you don't notice it. But if you start smelling gas as you read on the couch, you quickly notice it, get out of the house, and call the gas company. Thankfully, the human body is a master at adaption on many levels.

What Can Pain Teach Us about Adaptation?

Another kind of adaptation is called hedonic adaptation. This has to do with the way we respond to painful or pleasurable experiences. For instance, try this thought experiment. Shut your eyes and think about what would happen if you were badly injured in a car accident that paralyzed you from the waist down. You see yourself in a wheelchair, no longer able to walk or run. You imagine dealing with the daily hassles and pain of disability and being unable to resume many of the activities that you currently enjoy; you think that many of your future possibilities will now be closed to you. In imagining such a thing, you probably think that the loss of your legs will make you miserable for as long as you live.

It turns out that we are very good at conceiving the future but we can't foresee how we will adapt to it. It's difficult to imagine that, over time, you might get used to the changes in your lifestyle, adapt to your injury, and find that it's not as terrible as you once thought. It's even harder to imagine discovering new and unexpected joys in your new situation.

Yet numerous studies have shown that we adapt more quickly and to a larger degree than we imagine. The question is: how does adaptation work, and to what

degree does it change our contentedness, if at all?

During my first year at Tel Aviv University, I had the opportunity to reflect and later empirically test the idea of adaptation to pain.* One of the first classes I took was a course on the physiology of the brain. The purpose of the class was to understand the structure of different brain parts and relate them to behavior. How, Professor Hanan Frenk asked us, do hunger, epilepsy, and memory work? What enables the development and production of language? I did not have particularly high expectations going into a physiology class, but it turned out to be extraordinary in many ways—including the fact that Professor Frenk relied on his own personal history to direct his research interests.

Hanan was born in the Netherlands and emigrated to Israel in 1968 when he was about eighteen. Soon after he joined the Israeli army, an armored vehicle in which he was riding went over a land mine and exploded, leaving him with two amputated legs. Given this experience, one of Hanan's main research interests was —not surprisingly—pain, and we covered the topic in some detail in class. Since I also had a substantial personal interest in the topic, I stopped by Hanan's office from time to time to talk with him in more depth. Because of our similar experiences, our discussions of pain were both personal and professional. Soon we discovered many shared experiences with pain, healing, and the challenges of overcoming our injuries. We also found that we had been hospitalized in the same rehabilitation center and treated by some of the same physicians, nurses, and physical therapists, albeit years apart.

During one of these visits I mentioned to Hanan that I had just been to the dentist and that I hadn't taken any novocaine or other painkillers during the drilling. "It was an interesting experience," I said. "It was clearly painful, and I could feel the drilling and the nerve, but it didn't bother me that much." Surprised, Hanan told me that he too had refused novocaine at the dentist's since his injury. We began to wonder whether we were just two strangely masochistic individuals or whether there was something about our long exposure to pain that made the relatively minor experience of tooth drilling seem less daunting. Intuitively, and perhaps egotistically, we concluded that it was likely the latter.

About a week later, Hanan asked me to stop by his office. He had been thinking about our conversation and suggested that we empirically test the hypothesis that, assuming we were otherwise normal, our experiences had made us less concerned about pain. And thus my first hands-on experience with social science research was born.

We set up a small testing facility in the infirmary of a special country club for people who had been injured while serving in the army. The country club was a fabulous place. There were basketball games for people in wheelchairs, swimming lessons for those missing legs or arms, and even basketball for the blind. (Blind basketball looks a lot like handball. It's played on the entire width of the court, and the ball has a bell inside.) One of my physical therapists in the rehabilitation center, Moshe, was blind and played on one of the teams, and I especially enjoyed watching him play.

We posted signs around the country club that read "Research volunteers wanted

for a quick and interesting study." When the eager participants, all of whom had endured a variety of injuries, arrived at our testing facility, we greeted them with a tub of hot water outfitted with a heating generator and a thermostat. We'd heated the water to 48? centigrade (118.4? Fahrenheit) and asked each participant to put one arm into it. At the moment a participant's hand entered the hot water, we started a timer and asked him (all the participants were male) to tell us the exact point when the sensation of heat became a feeling of pain (which we termed "pain threshold"). We then asked the participant to keep his hand in the hot water until he could no longer stand it and at that point to pull his arm out of the tub (this was our measure of pain tolerance). We then repeated the same procedure using the other arm.

Once we finished inflicting physical pain on our participants, we asked them questions about the history of their injuries and about their experience with pain during their initial hospitalization period (on average, our participants had sustained their injuries fifteen years before submitting to our test) as well as in recent weeks. It took us some time, but we managed to collect information on about forty participants.

Next, we wanted to find out whether our participants' ability to sustain pain had increased due to their injuries. To do this, we had to find a control group and contrast the pain thresholds and tolerances across the two groups. We thought about recruiting people who were not afflicted by any serious injuries—maybe students or people at a mall. But on reflection, we worried that a comparison with such populations would introduce too many other factors. Students, for instance, were much younger than our experimental group, and people selected randomly at the mall would likely have wildly varying histories, injuries, and life experiences.

So we decided on a different approach. We took the medical files of our forty participants and showed them to a doctor, two nurses, and a physical therapist at the rehabilitation hospital where Hanan and I had spent so much time. We asked them to split the sample into two groups, the mildly injured and the more grievously injured. Once that was done, Hanan and I had two groups that were relatively similar to each other in many respects (all participants had been in the army, injured, and hospitalized, and were part of the same veterans country club) but differed in the severity of their injuries. By comparing these two groups, we hoped to see if the severity of our participants' injuries influenced the way they experienced pain many years later.

The severely injured group was made up of people like Noam, whose army job had been to disassemble land mines. At some unfortunate point, a land mine had exploded in his hands, piercing his body with numerous shrapnel wounds and costing him a leg and the sight in one eye. In the mildly injured group were men like Yehuda, who had broken his elbow while on duty. He had undergone an operation that had involved restoring the joint by adding a titanium plate, but he was otherwise in good health.

The participants who had been mildly injured reported that the hot water became painful (pain threshold) after about 4.5 seconds, while those who had been severely injured started feeling pain after 10 seconds. More interestingly, those in the mildly injured group removed their hands from the hot water (pain tolerance) after about 27 seconds, while the severely injured individuals kept their hands in the hot water for about 58 seconds.

This difference particularly impressed us since, in order to make sure that no one really got burned, we did not allow participants to keep their hands in the hot water for more than sixty seconds. We did not tell them in advance about the sixty-second rule, but if they reached the sixty-second mark we asked them to take their hands out. We did not need to enforce this rule for any participant in the mildly injured group, but we had to tell all but one of the severely injured participants to take their hands out of the hot water.

The happy ending? Hanan and I discovered that we were not as odd as we thought, at least not in respect to our pain response. Moreover, we found that there seems to be generalized adaptation involved in the process of acclimating to pain. Even though the people in our study had endured their injuries many years before, their overall approach to pain and ability to tolerate it seemed to have changed, and this change lasted for a long time.

WHY DID THIS past experience with pain alter participants' responses to such a degree? Two people in our study offered a hint. Unlike the rest of our participants, these individuals suffered not from traumatic injuries but rather from diseases. One had cancer; the other had a terrible intestinal disease. Sadly, both were terminal cases. On the signs we had posted requesting study participants, we'd neglected to state any prerequisites, so when these two people, who didn't have the types of injuries we were looking for, offered to help, I didn't know what to do. I didn't want them to suffer more pain for no reason, nor did I want them to feel unappreciated or unwelcome. So I decided to be polite and let them participate in the study but not to use their data in the analysis.

After the study was complete, I looked at their data and found something quite intriguing. Not only was their pain tolerance lower than that of the severely injured people (meaning that they kept their hands in the hot water for a shorter time), but it was also lower than that of the mildly injured ones. Though it is impossible to conclude anything based on data from only two participants, I wondered if the contrast between their types of ailments and the types of injuries that the other participants (and I) had suffered could offer a clue as to why severe injuries would lead people to care less about pain.

WHEN I WAS in the hospital, much of the pain I endured was associated with getting better. The operations, physical therapy, and bath treatments were all agonizing. Yet I endured them, expecting that they would lead to improvement. Even when the treatments were frustrating or didn't work, I understood that they were designed to aid my recovery.

For instance, one of the most difficult experiences I dealt with for the first few years after my injury was overstretching my skin. Every time I sat with my elbows or knees bent, even for an hour, the scars would shrink by just a bit and the tightening of my healing skin would eliminate my ability to completely straighten my arms or legs. To fight this, I would have to stretch my skin by myself and with the help of physical therapy—pushing hard against the taut skin, not quite tearing the scars, though it felt as if I were. If I didn't stretch the shrinking scars many times a day, the tightening would worsen until I could no longer achieve a full range of motion. When this happened, the physicians would perform another skin-

transplant operation to add skin to my shrinking scars, and the whole skin-stretching process would start again.

A particularly unpleasant fight with my tightening skin had to do with the scars on the front of my neck. Every time I looked down or relaxed my shoulders, the tightness in this skin would be reduced and the scars would start to shrink. To stretch the scars, the physical therapists made me spend the night lying flat on my back with my head dropping over the edge of the mattress. In that way, the front of my neck stretched to its limit (the neck pain I still endure is a daily reminder of that uncomfortable posture).

The point is that even those very unpleasant treatments were directed at improving my limitations and increasing my range of movement. I suspect that people with injuries like mine learn to associate pain with hope for a good outcome—and this link between suffering and hope eliminates some of the fear inherent in painful experiences. On the other hand, the two chronically ill individuals who took part in our pain study could not make any connection between their pain and a hope for improvement. They most likely associated pain with getting worse and the proximity of death. In the absence of any positive association, pain must have felt more frightening and more intense for them.

THESE IDEAS DOVETAIL with one of the most interesting studies ever conducted on pain. During World War II, a physician named Henry Beecher was stationed on Italy's Anzio beachhead, where he treated 201 wounded soldiers. In recording his treatments, he observed that only three-quarters of the hurt soldiers requested pain medication, despite having suffered serious injuries ranging from penetrating wounds to extensive soft tissue wounds. Beecher compared these observations to treatments of his civilian patients who had been hurt in all kinds of accidents, and he found that people with civilian injuries requested more medication than the soldiers injured in battle did.

Beecher's observations showed that the experience of pain is rather complex. The amount of pain we end up experiencing is not only a function of the intensity of the wound, he concluded, but it also depends on the context in which we experience the pain and the interpretation and meaning we ascribe to it. As Beecher would have predicted, I came away from my injury caring less about my own pain. I don't enjoy pain or feel it less than other people. Rather, I'm suggesting that adaptation, and the positive associations I've made between hurt and healing, help me to mute some of the negative emotions that usually accompany pain.

Hedonic Adaptation

Now that you, dear reader, have a general understanding of how physical adaptation works (as in your visual system) and how adaptation to pain operates, let's examine more general cases of hedonic adaptation—the process of getting used to the places we live, our homes, our romantic partners, and almost everything else.

BURNS VERSUS CHILDBIRTH

Back at the university, Professor Ina Weiner, who taught a course on the psychology of learning, told us that women have a higher pain threshold and tolerance than men because they have to deal with childbirth. Though the theory sounded perfectly plausible, it did not fit with my personal experience in the burn department. There I had met Dalia, a woman of about fifty who had been hospitalized after fainting while cooking. She had landed on a hot stove and had an extensive burn on her left arm, requiring skin grafting on about 2 percent of her body (which was relatively minor compared to many of the other patients). Dalia hated the bath treatment and bandage removal as much as the rest of us and she told me that in her mind, the pain of childbirth was nothing compared to the pain of her burn and treatments.

I told Professor Weiner this, but she was unimpressed with the anecdote. So I set up my water-heating equipment in a computer lab where I had a part-time job programming experiments and conducted a little test. I invited passing students to put a hand into hot water and keep it there until they could not stand it any longer in order to measure their pain tolerance. I also recorded their gender. The results were very clear. The men kept their hands in the tub much longer than the women.

At the start of the next class I eagerly raised my hand and told Professor Weiner and the whole class about my results. Unfazed and without losing a beat, she told me that all I'd proven was that men were idiots. "Why would anybody," she sneered, "keep their hand in hot water for your study? If there was a real goal to the pain, you would see what women are truly capable of."

I learned some important lessons that day about science, and also about women. I also learned that if someone believes something strongly, it is very difficult to convince him or her otherwise.*

When we move into a new house, we may be delighted with the gleaming hardwood floors or upset about the garish lime green kitchen cabinets. After a few weeks, those factors fade into the background. A few months later we aren't as annoyed by the color of the cabinets, but at the same time, we don't derive as much pleasure from the handsome floors. This type of emotional leveling out—when initial positive and negative perceptions fade—is a process we call hedonic adaptation.

Just as our eyes adjust to changes in light and environment, we can adapt to changes in expectation and experience. For example, Andrew Clark showed that job satisfaction among British workers was strongly correlated with *changes* in workers' pay rather than the level of pay itself. In other words, people generally grow accustomed to their current pay level, however low or high. A raise is great and a pay cut is very upsetting, regardless of the actual amount of the base salary.

In one of the earliest studies on hedonic adaptation, Philip Brickman, Dan Coates, and Ronnie Janoff-Bulman compared the overall life happiness among three groups: paraplegics, lottery winners, and normal people who were neither disabled nor particularly lucky. Had the data collection taken place immediately following the event that led to the disability or the day after the lottery win, one would expect the paraplegics to be far more miserable than the normal people and the lottery winners much happier. However, the data were collected a year after the event. It turned out that although there were differences in happiness levels among the groups, they were not as pronounced as you might expect. While the paraplegics were not as satisfied with life as the normal people and the lottery winners were more satisfied, both paraplegics and lottery winners were

surprisingly close to normal levels of life satisfaction. In other words, though a life-altering event such as a bad injury or winning a lottery can have a huge initial impact on happiness, this effect can, to a large degree, wear off over time.

A SUBSTANTIAL AMOUNT of research over the past decade has reinforced the idea that although internal happiness can deviate from its "resting state" in reaction to life events, it usually returns toward its baseline over time. Though we don't hedonically adapt to every new situation, we do adapt to many of them, and to a large degree—whether we're getting used to a new home or car, new relationships, new injuries, new jobs, or even incarceration.

Overall, adaptation seems to be a rather handy human quality. But hedonic adaptation can be a problem for effective decision making because we often cannot accurately predict that we will adapt—at least not to the level that we actually do. Think again about the paraplegics and lottery winners. Neither they nor their families and friends could have predicted the extent to which they would adapt to their new situations. Of course, the same applies to many other variations in our circumstance, from romantic breakups to failure to get a promotion at work to having one's favorite candidate lose an election. In all of these cases, we expect that we will be miserable for a long time if things do not work out the way we hope; we also think that we will be enduringly happy if things go our way. But in general, our predictions are off base.*

In the end, although we can accurately predict what will happen when we walk from a dark movie theater to a sunny parking lot, we do a relatively poor job anticipating either the extent or the speed of hedonic adaptation. We usually get it wrong on both counts. In the long term, we don't end up being as happy as we thought we'd be when good things happen to us, and we are not as sad as we expect when bad things occur.

ONE REASON FOR our difficulty in predicting the extent of our hedonic adaptation is that when making predictions, we usually forget to take into account the fact that life goes on and that, in time, other events (both positive and negative) will influence our sense of well-being. Imagine, for example, that you are a professional cellist who lives to play Bach. Your music is both your livelihood and your joy. But a car accident crushes your left hand, forever taking away your ability to play cello. Right after your accident, you are likely to be extremely depressed and predict that you will remain miserable for the rest of your life. After all, music has been your life, and now it is gone. But in your unhappiness and grief, you don't understand how extraordinarily flexible you really are.

BALM FOR BROKEN HEARTS

When Romeo suffered over his breakup with his first girlfriend, Rosaline, you would have thought it was the end of the world. He stayed up all night and shut himself in his room. His parents were worried. When his cousin asked how he was faring, Romeo sounded as if he would die of hopeless love for the girl who'd rejected him. "She hath forsworn to love," he complained, "and in that vow / Do I live dead that live to tell it now." That night he met Juliet and forgot all about Rosaline.

Though most of us aren't as fickle as Romeo, we are much more resilient than we think we are when it comes to getting over a broken heart. In a study of college students that lasted

thirty-eight weeks, Paul Eastwick, Eli Finkel, Tamar Krishnamurti, and George Loewenstein contrasted romantic intuitions and reality. The researchers first asked students who were in romantic relationships how they expected to feel after a breakup (they thought they'd feel like Romeo, post-Rosaline), and then they waited. Over the duration of the long study, some of the students inevitably experienced romantic breakups, which gave the researchers an opportunity to find out how they actually felt after having fallen off a romantic cliff. Then the researchers compared the participants' predictions to their actual feelings.

It turned out that the breakups were not as earth-shattering as the students had expected and the emotional grieving was much shorter-lived than they had originally assumed. This is not to say that romantic breakups are not distressful, only that they are generally far less intense than we expect them to be.

Granted, college undergrads are pretty fickle (particularly when it comes to romance), but there is a good chance that these findings apply to people of all ages. In general, we're not that good at predicting our own happiness. Ask a happily married couple how they might feel about divorcing, and they will forecast extreme devastation. And though such a dark prediction is largely accurate, a divorce is often less devastating to a married couple than either member might anticipate. I am not sure if acting on this conclusion would lead to a good social outcome, but it does mean that we should not worry as much about breaking up. We'll end up adapting to some degree, and there is a good chance that we will go on to live and love another day.

Consider the story of Andrew Potok, a blind writer who lives in Vermont. Potok was a gifted painter who gradually began losing his sight to an inherited eye disease, retinitis pigmentosa. Even as his sight failed, something else happened: he began to realize that he could paint with words just as well as he could paint with colors, and he wrote a book about his experience of going blind.[16] He said, "I thought I'd go down and hit rock bottom and get stuck in the mud, but liberation came in a magical way. One night I had a dream where words came spewing out of my mouth, like those unfurling, whistling party favors that you blow on. The words were all beautiful colors. I awoke from the dream and realized something new was possible. I felt this lightness in my heart as pleasing words came out of me. To my surprise, they turned out to be pleasing to others. And when they were published, I saw myself as a newly empowered person."

"One of the big problems with blindness is a slowing of everything," Potok added. "You're so busy figuring out where you are in your travels that you have to pay strict attention all the time. It seems that everyone is whizzing by you. And then, one day, you realize that slowness isn't so bad, that paying more attention has its rewards, and you want to write a book called *In Praise of Slowness*." Of course, Potok still regrets his blindness, which poses a thousand daily challenges. But it has been a passport to a new country that he could never previously have imagined visiting.

So imagine again that you are a cellist. Eventually, you would probably change your lifestyle and become involved with new things. You might form new relationships, spend more time with the people you love, pursue a profession in music history, or take a trip to Tahiti. Any of these things is likely to have a large influence on your state of mind and grab your emotional attention. You will always regret the accident—both physically and as a reminder of how life could have been—but its influence will not be as vivid or as incessant as you originally thought it would be. "Time heals all wounds" precisely because, over time, you will partially adapt to the state of your world.

The Hedonic Treadmill

By failing to anticipate the extent of our hedonic adaptation, as consumers we routinely escalate our purchases, hoping that new stuff will make us happier. Indeed, a new car feels wonderful, but sadly, the feeling lasts for only a few months. We get used to driving the car, and the buzz wears off. So we look for something else to make us happy: maybe new sunglasses, a computer, or another new car. This cycle, which is what drives us to keep up with the Joneses, is also known as the hedonic treadmill. We look forward to the things that will make us happy, but we don't realize how short-lived this happiness will be, and when adaptation hits we look for the next new thing. "This time," we tell ourselves, "this thing will really make me happy for a long time." The folly of the hedonic treadmill is illustrated in the following cartoon. The woman in the cartoon may have a lovely car and she might get a new kitchen, but in the long run her level of happiness will not change much. As the saying goes, "Wherever you go, there you are."



"Dan, when we got this car last year I was ecstatic, but now it no longer makes me happy. What do you think about renovating the kitchen?"

An illustrative study of this principle was conducted by David Schkade and Danny Kahneman. They decided to inspect the general belief that Californians are happier—after all, they live in California, where the weather is usually wonderful.* Somewhat unsurprisingly, they found that midwesterners think that fair-weather Californians are, overall, considerably more satisfied with their lives, while Californians think that midwesterners are considerably less satisfied overall with life because the latter have to suffer through long, subzero winters. Consequently, people from both states expect that a Chicagoan moving to sunny California will see a dramatic improvement in lifestyle, while the Angeleno moving to the Midwest will get a dramatic reduction in happiness.

How accurate are these predictions? It turns out that they are somewhat accurate. New transplants do indeed experience the expected boost or reduction in quality of life due to the weather. But, much like everything else, once adaptation hits and they get used to the new city, their quality of life drifts back toward its premoving level. The bottom line: even if you feel strongly about something in the short term, in the long term things will probably not leave you as ecstatic or as

miserable as you expect.

Overcoming Hedonic Adaptation

Given that hedonic adaptation is clearly a mixed bag, how, you might wonder, can we use our understanding of it to get more out of life? When adaptation works in our favor (such as when we get used to living with an injury), we should clearly let this process take place. But what about instances when we wish not to adapt? Can we somehow extend the euphoric feeling of a new car, city, relationship, and so on?

One key to changing the adaptation process is to interrupt it. This is exactly what Leif Nelson and Tom Meyvis did. In a set of experiments, they measured how small interruptions—which they called hedonic disruptions—influence the overall enjoyment and irritation we get from pleasurable and painful experiences. In essence, they wanted to see if taking breaks in the middle of pleasurable experiences would enhance them and if disrupting a negative experience would make it worse.

Before I describe their experiments and the results, think about a chore you don't particularly look forward to doing. Maybe it's preparing your taxes, studying for an exam, cleaning all the windows in your house, or writing postholiday thank-you letters to your horrid Aunt Tess and everyone else in your very large family. You've set aside a significant block of time to knock out this annoying task in a single day, and now you face this question: is it better to complete the chore all at once or to take a break in the middle? Alternatively, let's say you're soaking in a hot tub with a cool glass of raspberry iced tea, eating a bowlful of fresh strawberries, or luxuriating in a hot-stone massage. Would you want to experience your pleasure all at once or take a break and do something different for a short while?

Leif and Tom found that, in general, when asked about their preferences for breaking up experiences, people want to disrupt annoying experiences but prefer to enjoy pleasurable experiences without any breaks. But following the basic principles of adaptation, Leif and Tom suspected that people's intuitions are completely wrong. People will suffer less when they do not disrupt annoying experiences, and enjoy pleasurable experiences more when they break them up. Any interruption, they guessed, would keep people from adapting to the experience, which means that it would be bad to break up annoying experiences but useful to interrupt pleasurable ones.

To test the painful half of their hypothesis, Leif and Tom strapped headphones to the ears of a group of participants and played for them the melodic sounds of . . . a noisy vacuum cleaner. This was no Dustbuster hum; it was a five-second blast of a large machine. A second, more unfortunate group of participants had the same experience, but theirs lasted for forty annoying seconds. Just imagine these poor souls gripping their armrests and gritting their teeth.

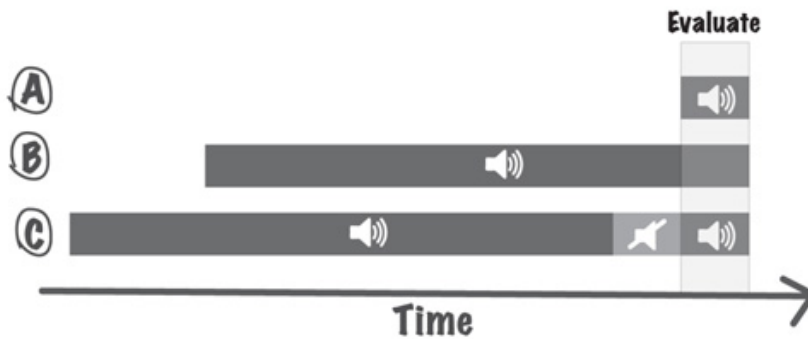
A third group of people experienced the displeasure of the forty-second-long vacuum sound followed by a few seconds of silence and then an additional burst of five seconds of the same annoying sound. Objectively, this last group experienced a larger quantity of unpleasant noise than either of the other two groups. Were they more annoyed? (You can try this at home. Have a friend turn the vacuum on and

off while you lie on the floor next to it—and consider how annoyed you are in the last five seconds of each of these conditions.)

After listening to the sound, the participants evaluated their irritation levels during the last five seconds of the experience. Leif and Tom found that the most pampered participants—those who had endured only five seconds of sound—were far more irritated than those who listened to the annoying sound for much longer. As you may have guessed, this result suggests that those who suffered through the vacuum *whooom* for forty seconds got used to it and found the last five seconds of their experience to be not so bad. But what happened to those who experienced the short break? As it turned out, the interruption made things worse. The adaptation went away, and the annoyance returned.

Evaluating an annoying experience with and without a break

Participants were exposed to a five-second vacuum cleaner sound (A), a forty-second vacuum cleaner sound (B), or a forty-second vacuum cleaner sound, followed by a few seconds' break and then a five-second vacuum cleaner sound (C). In all cases the participants were asked to evaluate their annoyance during the final five seconds of the experience.



The moral of the story? You may think that taking a break during an irritating or boring experience will be good for you, but a break actually decreases your ability to adapt, making the experience seem worse when you have to return to it. When cleaning your house or doing your taxes, the trick is to stick with it until you are done.

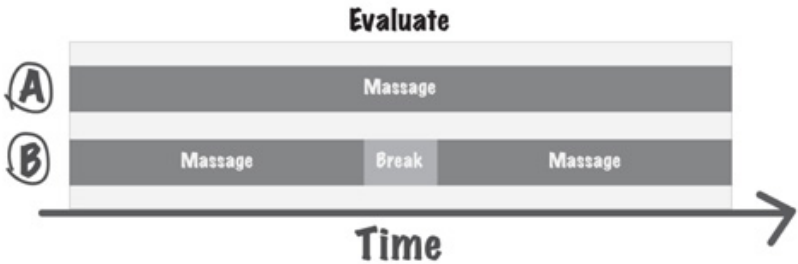
And what about pleasurable experiences? Leif and Tom treated two other groups of participants to three-minute massages in one of those fabulous chairs that people are always standing in line for at Brookstone. The first group received an uninterrupted three-minute treatment. The second group received a massage for eighty seconds, followed by a twenty-second break, after which the massage resumed for another eighty seconds—making their massage time two minutes and forty seconds, twenty seconds less than the uninterrupted group. At the end of the massages all the participants were asked to evaluate how much they had enjoyed the entire treatment. As it turned out, those who underwent the shorter massages

with the break not only enjoyed their experiences more but they also said they would pay twice as much for the same interrupted massage in the future.

Clearly, these results are counterintuitive. What sweeter pleasure is there than that moment when you allow yourself to walk away from filing your taxes, if only for a few minutes? Why would you want to set down your spoon in the middle of eating a bowl of Ben & Jerry's Cherry Garcia, especially when you'd been looking forward to it all day? Why get out of the warm hot tub and into the cold air to refresh your drink, rather than asking someone else to do it for you?

Evaluating a pleasurable experience with and without a break

Participants were exposed to either a three-minute massage (A) or an eighty-second massage, followed by a twenty-second break and another eighty-second massage (B). In all cases the participants were asked to evaluate their enjoyment of the whole experience.



Here is the trick: instead of thinking about taking a break as a relief from a chore, think about how much harder it will be to resume an activity you dislike. Similarly, if you don't want to take the plunge and get out of the hot tub to refresh your (or your romantic partner's) drink, consider the joy of returning to the hot water (not to mention that your friend will not realize that you are doing this to extend your own pleasure and consequently will highly appreciate your "sacrifice").*

Adaptation: The Next Frontier

Adaptation is an incredibly general process that operates at deep physiological, psychological, and environmental levels, and it affects us in many aspects of our lives. Because of its generality and pervasiveness, there is also a lot that we don't yet understand about it. For example, it is unclear whether we experience complete or just partial hedonic adaptation as we get used to new life circumstances. It is also unclear how hedonic adaptation works its magic on us or whether there are many paths to achieving it. Nevertheless, the following personal anecdotes might shed some light on this important topic. (And stay tuned, because more research on hedonic adaptation is on its way.)

To illustrate the complexity of hedonic adaptation, I want to share some examples of ways in which I have not fully adapted to my circumstances. Because a large part of my injury is physically observable (I have scars on my neck, face, legs, arms, and hands), soon after my injury I started paying attention to the ways people looked at me. My awareness of how I appeared to them has given me a substantial amount of misery over the years. These days, I don't meet that many new people in my day-to-day life, so I am not as sensitive about the way I look to others. But when I'm at large gatherings, and particularly when I'm with people whom I don't know or have just met, I find myself highly aware of, and sensitive to, the way people look at me. When I am introduced to someone, for example, I automatically take mental notes of how that person looks at me and whether and how he or she shakes my injured right hand.

You might expect that over the years I would have adapted to my self-image, but the truth is that time has not made a serious dent in my sensitivity. I certainly look better than I used to (scars do improve over time, and I've had many operations), but my overall concern about others' response to my looks has not decreased much. Why has adaptation failed me in this particular case? Perhaps it's like the vacuum cleaner experiment. Intermittent exposure to others' reactions to my looks may be the influence that prevents me from adapting.

A second personal anecdote of failed adaptation concerns my dreams. Immediately after the accident, I appeared in my dreams with the same young, healthy, physically unscarred body I'd had before the injury. Clearly, I was either denying or ignoring the alteration of my appearance. A few months later, some adaptation took place; I began to dream about treatments, procedures, life in the hospital, and the medical apparatuses surrounding me. In all of these dreams, my image of myself was still unscathed; I still appeared healthy, except that I was weighed down by different kinds of medical devices. Finally, about a year after the accident, I ceased to have any self-image in my dreams—I became a distant observer in them. I no longer woke to the emotional torment of realizing all over again the extent of my injuries (which was good), but I never did get used to the new reality of my injured self (which wasn't good). Disassociating from myself in my own dreams was therefore somewhat useful, but, Freudian dream analysis notwithstanding, it seems that my adaptation to my altered situation partially failed.

A third example of my personal adaptation has to do with my ability to find happiness in my professional life as an academic. In general, I've managed to find a job that allows me to work more hours when I feel good and work less when I am in more pain. In my choice of a professional career, I suspect that my ability to live with my limitations has a lot to do with what I call active adaptation. This type of adaptation is not physical or hedonic; instead, a bit like natural selection in evolutionary theory, it is based on making many small changes over a long sequence of decisions, so that the final outcome fits one's circumstances and limitations.

As a child, I never dreamed about being an academic (who does?), and the manner by which I chose my career path was a slow, one-step-at-a-time process that stretched over years. In high school, I was one of the quiet kids in the class, raising my voice to tell an occasional joke but rarely to participate in any academic discussion. During my first year in college I was still undergoing treatments and

wearing a Jobst suit,* which meant that many of the activities that occupied the other students were beyond my abilities. So what did I do? I engaged in an activity that I could take part in: studying (something that none of my previous schoolteachers would have believed).

Over time I began engaging in more and more academic pursuits. I started to enjoy learning and found considerable satisfaction in my ability to prove to myself and others that at least one part of me had not changed: my mind, ideas, and way of thinking.* The way I spent my time and the activities I enjoyed slowly changed, until at some point it became very clear that there was a good fit among my limitations, my abilities, and an academic life. My decision wasn't sudden; rather, it was made up of a long series of small steps, each of which moved me closer and closer to a life that now fits me well and to which I've become gratefully accustomed. And thankfully, it's one that I happen to enjoy a great deal.

Overall, when I look at my injury—powerful, painful, and prolonged as it was—it surprises me how well my life has turned out. I've found a great deal of happiness in both my personal life and my professional life. Moreover, the pain I experience seems less difficult to bear as time progresses; not only have I learned how to deal with it, but I've also discovered things I can do to limit it. Have I fully adapted to my current circumstances? No. But I have adapted far beyond what I would have expected when I was twenty. And I am thankful for the amazing power of adaptation.

Getting Adaptation to Work for Us

Now that we have a better understanding of adaptation, can we use its principles to help us better manage our lives?

Let's consider the case of Ann, a university student who is about to graduate. During the past four years, Ann has lived in a small dorm room with no air conditioner and old, stained, ugly furniture that she shares with two messy individuals. During this time Ann has slept on the top level of a bunk bed, and she hasn't had much space for her clothes, her books, or even her miniature-book collection.

A month before graduation, Ann lands an exciting job in Boston. As she looks forward to moving into her first apartment and being paid her first real salary, she makes a list of all the things she would like to purchase. How can she make her purchase decisions in a way that will maximize her long-term happiness?

One possibility is for Ann to take her paycheck (after paying her rent and other bills, of course) and go on a spending spree. She can throw away the hand-me-downs and buy a beautiful new couch, an astronaut-foam bed, the biggest plasma television possible, and even those Celtics season tickets she's always wanted. After putting up with uncomfortable surroundings for so long, she might say to herself, "It's time to indulge!" Another option is to approach her purchasing very gradually. She might start with a comfortable new bed. Maybe in six months she can spring for a television and next year for a sofa.

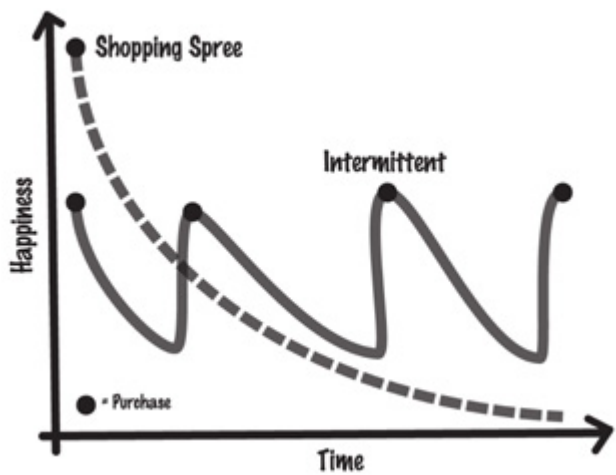
Although most people in Ann's position would think about how nice it would be to dress up their apartment and so would go on a shopping spree, by now it should be clear that, given the human tendency for adaptation, she would actually be

happier with the intermittent scenario. She can get more "happiness buying power" out of her money if she limits her purchases, takes breaks, and slows down the adaptation process.

The lesson here is to slow down pleasure. A new couch may please you for a couple of months, but don't buy your new television until after the thrill of the couch has worn off. The opposite holds if you are struggling with economic cutbacks. When reducing consumption, you should move to a smaller apartment, give up cable television, and cut back on expensive coffee all at once—sure, the initial pain will be larger, but the total amount of agony over time will be lower.

How to space purchases to increase happiness

The graph below illustrates Ann's two possible approaches for spending her money. The area under the dashed line shows her happiness with the shopping spree strategy. After the shopping spree Ann will be very happy, but her happiness will soon wear off as her purchases lose their novelty. The area under the solid line shows her happiness with the intermittent approach strategy. In this case, she will not reach the same level of initial happiness, but her happiness will be continually revitalized because of the repeated changes. And the winner? Using the intermittent approach, Ann can create a higher overall happiness level for herself.



Another way of getting adaptation to work for us is by placing limits on our consumption—or at least our alcohol consumption. One of my graduate school advisers, Tom Wallsten, used to say that he wanted to become an expert on wines that cost $15 or less. Tom's idea was that if he started buying fancy $50-a-bottle wines, he would get used to that level of quality and would no longer be able to derive any pleasure from cheaper wines.* Moreover, he reasoned that if he started consuming $50 bottles, over time he would have to escalate his spending to $80, $90, and $100 bottles, simply because his palate would have adapted to a higher level of finesse. Finally, he thought that if he never tried $50 bottles in the first

place, his palate would be most sensitive to changes in wine quality of varieties in his preferred price range, further increasing his satisfaction. With those arguments in mind, he avoided the hedonic treadmill, kept his spending under control, became an expert in $15 wine, and lives very happily that way.

In a similar vein, we can harness adaptation to maximize our overall satisfaction in life by shifting our investments away from products and services that give us a constant stream of experiences and toward ones that are more temporary and fleeting. For example, stereo equipment and furniture generally provide a constant experience, so it's very easy to adapt to them. On the other hand, transient experiences (a four-day getaway, a scuba diving adventure, or a concert) are fleeting, so you can't adapt to them as readily. I am not recommending that you sell your sofa and go scuba diving, but it is important to understand what types of experiences are more and less susceptible to adaptation. Thus, if you are considering whether to invest in a transient (scuba diving) or a constant (new sofa) experience and you predict that the two will have a similar impact on your overall happiness, select the transient one. The long-term effect of the sofa on your happiness is probably going to be much lower than you expect, while the long-term enjoyment of and memories from the scuba diving will probably last much longer than you predict.

To heighten your level of enjoyment, you can also think about ways to inject serendipity and unpredictability into your life. Here's a little demonstration of this point. Have you ever noticed how hard it is to tickle yourself? Why? Because when we try to tickle ourselves, we know exactly how our fingers will move and this perfect predictability kills the joy of tickling. Interestingly, when we use our right hand to tickle our right side, we don't feel any tickling sensation; but when we use our right hands to tickle our left sides, the slight difference in timing between the nerve system on the right and left side of the body can create a low-level unpredictability, and hence we can feel a slight tickling sensation.

The benefits of randomness range from the personal to the romantic to our work life. As the economist Tibor Scitovsky argued in *The Joyless Economy,* we have a tendency to take the safe and predictable path at work, and by extension in our personal life, and do the things that provide steady and reliable progress. But, Scitovsky argues, real progress—as well as real pleasure—comes from taking risks and trying very different things. So the next time you have to make a presentation, work with a team, or pick a project to work on, try doing something new. Your attempt at humor or cross-corporate collaboration may fail, but on balance it might make a positive difference.

Another lesson in adaptation has to do with the situations of the people around us. When other people have things that we don't, the comparison can be very apparent and, as a consequence, we can be slower to adapt. For me, being in the hospital for three years was relatively easy because everyone around me was injured and my abilities and inabilities were within the range of the people around me. Only when I left the hospital did I understand the full extent of my limitations and difficulties —a realization that was very difficult and depressing.

On a more practical level, let's say you want a particular laptop but decide that it's too expensive. If you settle for a cheaper one, you'll most likely get used to it over time. That is, unless the person in the cubicle next to you has the laptop that you originally wanted. In the latter case, the daily comparison between your laptop and your neighbor's will slow down your adaptation and make you less happy. More generally, this principle means that when we consider the process of adaptation, we should think about the various factors in our environment and how they may influence our ability to adapt. The sad news is that our happiness does depend to some degree on our ability to keep up with the Joneses. The good news is that since we have some control over what environment we put ourselves into—as long as we pick Joneses to whom we don't feel bad in comparison, we can be much happier.

THE FINAL LESSON is that not all experiences lead to the same level of adaptation and not all people respond to adaptation in the same way. So my advice is to explore your individual patterns and learn what pushes your adaptation button and what doesn't.

In the end, we are all like the metaphorical frogs in hot water. Our task is to figure out how we respond to adaptation in order to take advantage of the good and avoid the bad. To do so, we must take the temperature of the water. When it begins to feel hot, we need to jump out, find a cool pond, and identify and enjoy the pleasures of life.

Chapter 7
Hot or Not?

Adaptation, Assortative Mating, and the Beauty Market

A large, full-length mirror awaited me in the nurses' station. As I hadn't walked more than a few feet for months, traveling the length of the hallway to the nurses' station was a true challenge. It took ages. Finally I turned the corner and inched closer and closer to the mirror, to take a good, hard look at the image reflecting back at me. The legs were bent and thickly covered in bandages. The back was completely bowed forward. The bandaged arms collapsed lifelessly. The entire body was twisted; it seemed foreign and detached from what I felt was me. "Me" was a good-looking eighteen-year-old. It was impossible that the image was me.

The face was the worst. The whole right side gaped open, with yellow and red pieces of flesh and skin hanging down like a melting wax candle. The right eye was pulled severely toward the ear, and the right sides of the mouth, ear, and nose were charred and distorted.

It was hard to comprehend all the details; every part and feature seemed disfigured in one way or another. I stood there and tried to take in my reflection. Was the old Dan buried somewhere in the image that stared back from the mirror? I recognized only the left eye that gazed at me from the wreckage of that body. Was this really *me*? I simply could not understand, believe in, or accept this deformed body as my own. During the various treatments, when my bandages were removed, I had seen parts of my body, and I knew how terrible some of the burns looked. I had also been told that the right side of my face was badly injured. But somehow, until I stood before the mirror, I hadn't put it all together. I was torn between the desire to stare at the thing in the mirror and the compulsion to turn away and ignore this new reality. Soon enough the pain in my legs made the decision for me, and I returned to my hospital bed.

Dealing with the physical aspects of my injury was torture enough. Dealing with the terrible blow to my teenage self-image added a different type of challenge to my recovery. At that point in my life, I was trying to find my place in society and understand myself as a person and as a man. Suddenly I was condemned to three years in a hospital and demoted from what my peers (or at least my mother) might have considered attractive to something else altogether. In losing my looks, I'd lost something crucial to how we all—particularly young people—define ourselves.

Where Do I Fit In?

Over the next few years, many friends came to visit. I saw couples—healthy, beautiful, pain-free people who had been my pals and peers in school—flirt, get together, and split up; naturally, they fully immersed themselves in their romantic pursuits. Before my accident, I had known exactly where I belonged in the social

hierarchy. I had dated a few of the girls in this group and generally knew who would and would not want to date me.

But now, I asked myself, where did I fit into the dating scene? Having lost my looks, I knew I had become less valuable in the dating market. Would the girls I used to go out with reject me if I asked them now? I was quite sure they would. I could even see their logic in doing so. After all, they had better options, and wouldn't I do the same if our fortunes were reversed? If the attractive girls rejected me, would I have to marry someone who also had a disability or deformity? Must I now "settle"? Did I need to accept the idea that my dating value had dropped and that I should think differently about a romantic partner? Or maybe there was some hope. Would someone, someday, overlook my scars and love me for my brains, sense of humor, and cooking?

There was no escape from realizing that my market value for romantic partners had vastly diminished, but at the same time I felt that only one part of me, my physical appearance, was damaged. I didn't feel that I (the real me) had changed in any meaningful way, which made it all the more difficult to accept the idea that I was suddenly less valuable.

Mind and Body

Not knowing much about extensive burns, I initially expected that once my burns were healed, I would go back to how I was before my injury. After all, I'd had a few small burns in the past, and, aside from slight scars, they'd disappeared in a few weeks without much of a trace. What I didn't realize was that these deep and extensive burns were very different. As my burns began to heal, much of my real struggle was only starting—as was my frustration with my injury and my body.

As my wounds healed, I faced the hourly challenges of shrinking scars and the need to fight continuously against the tightening skin. I also had to contend with the Jobst pressure bandages that covered my entire body. The numerous contraptions that extended my fingers and held my neck steady, though medically useful, made me feel all the more alien. All of these foreign additions that supported and moved my body parts prevented my physical self from feeling anything like it used to. I started to actively resent my body and think of it as an enemy that betrayed me. Like the Frog Prince or the Man in the Iron Mask, I felt as if no one could discern the real me trapped inside.*

I was not the philosophical type as a teenager, but I started thinking about the separation of mind and body, a duality I experienced every day. I struggled with my feelings of imprisonment in this awful pain-racked body, until, at some point, I decided that *I* would prevail over it. I started stretching my healing skin as much as I could. I worked against the pain, with the feeling that my mind was taming my body into submission and achieving victory over it. I embraced the mind-body dualism that I felt so strongly and tried very hard to make sure that my mind won the battle.

As part of my campaign, I promised myself that my actions and decisions would be directed by my mind alone and not by my body. I would not let pain rule my life, and I would not allow my body to dictate my decisions. I would learn to ignore the calls from my body, and I would live in the mental world where I was still the old me. I would be in control from that moment on!

I also resolved to evade the problem of my declining value in the dating market by avoiding the issue altogether. If I was going to ignore my body on every front, I certainly wouldn't submit to any romantic needs. With romance out of my life, I wouldn't need to worry about my place in the dating hierarchy or about who might want me. Problem solved.

BUT A FEW months after my injury, I learned the same lesson that countless ascetics, monks, and purists have learned time and time again: getting the mind to triumph over the body is easier said than done.

My daily via dolorosa in the burn department included the dreaded bath treatment, in which the nurses would soak me in a bath with disinfectant. After a short time, they would start ripping off my bandages one by one. Having completed this process, they would scrape the dead skin away, put some ointment on my burns, and cover me up again. That was the usual routine, but on the days immediately following each of my many skin-transplant operations, they would skip the bath treatment because the water could potentially carry infections from other parts of my body to the fresh surgical wound. Instead, on those days, I would get a sponge bath in bed, which was even more painful than the regular treatment because the bandages could not be soaked, making their removal even more agonizing.

One particular day, my sponge bath routine took a different turn. After removing all the bandages, a young and very attractive nurse named Tami washed my stomach and thighs. I suddenly experienced a sensation coming from somewhere in the middle of my body that I had not felt in months. I was mortified and embarrassed to find I had an erection, but Tami laughed and told me that it was a great sign of improvement. Her positive spin helped a bit with the embarrassment, but not much.

That night, alone in my room and listening to the symphony of beeps from the various medical instruments, I reflected on the day's events. My teenage hormones were back in action. They were oblivious to the fact that I looked quite different from the young man I once was. My hormones were also displaying a shocking lack of respect for my decision not to let my body dictate my actions. At that point, I realized that the strong separation I felt between mind and body was, in fact, inaccurate, and that I would have to learn to live in mind-body harmony.

NOW THAT I was back in the land of relative normalcy—that is, of people with both mental and physical demands—I started thinking again about my place in society. Particularly during the times when my body was functioning better and the pain was less, I would wonder about the social process that drives us toward some people and away from others. I was still in bed most of the time, so there was nothing I could actually do, but I started thinking about what my romantic future might hold. As I analyzed the situation over and over, my personal concerns soon developed into a more generalized interest in the romantic dance.

Assortative Mating and Adaptation

You don't need to be an astute observer of human nature to realize that, in the

world of birds, bees, and humans, like attracts like. To a large degree, beautiful people date other beautiful people, and "aesthetically challenged"* individuals date others like them. Social scientists have studied this birds-of-a-feather phenomenon for a long time and given it the name "assortative mating." While we can all think of examples of bold, talented, rich, or powerful yet aesthetically challenged men coupled with beautiful women (think of Woody Allen and Mia Farrow, Lyle Lovett and Julia Roberts, or almost any British rock star and his model/actress wife), assortative mating is generally a good description of the way people tend to find their romantic partners. Of course, assortative mating is not just about beauty; money, power, and even attributes such as a sense of humor can make a person more or less desirable. Still, in our society, beauty, more than any other attribute, tends to define our place in the social hierarchy and our assortative mating potential.

Assortative mating is good news for the men and women sitting on the top rung of the attractiveness ladder, but what does it mean for the majority of us on the middle or lower rungs? Do we adapt to our position in the social hierarchy? How do we learn, to paraphrase the old Stephen Stills song, to "love the ones we're with"? This was a question that Leonard Lee, George Loewenstein, and I started discussing one day over coffee.

Without indicating which of us he had in mind, George posed the following question: "Consider what happens to someone who is physically unattractive. This person is generally restricted to date and marry people of his own attractiveness level. If, on top of that, he is an academic, he cannot compensate for his bestowed ugliness by making lots of money." George continued with what would become the central question of our next research project: "What will become of that individual? Will he wake up every morning, look at the person sleeping next to him, and think 'Well, that's the best I can do'? Or will he somehow learn to adapt in some way, change, and not realize that he has settled?"

A DEMONSTRATION OF ASSORTATIVE MATING, OR AN IDEA FOR AN AWKWARD DINNER PARTY

Imagine that you have just arrived at a party. As you walk in, the host writes something on your forehead. He instructs you not to look at the mirror or ask anyone about it. You look around the room and see that the other men and women have numbers from 1 to 10 written on their foreheads. The host tells you that your goal is to pair up with the highest-numbered person who is willing to talk to you. Naturally, you walk up to a 10, but he or she gives you one look and walks away. You then look for 9s or 8s and so on, until a 4 extends a hand to you and you go together to get a drink.

This simple game describes the basic process of assortative mating. When we play this game with potential romantic partners in the real world, it is often the case that people with high numbers find others with high numbers, medium numbers match with their equivalents, and low numbers connect with their likes. Each person has a value (in the party game, the value is clearly written); the reactions we get from other people help us figure out our position in the social hierarchy and find someone who shares our general level of desirability.

One way to think about the process by which an aesthetically challenged person adapts to his or her own limited appeal is what we might call the "sour grapes

strategy," named after Aesop's fable "The Fox and the Grapes." While walking through a field on a hot day, a fox sees a bunch of plump, ripe grapes trained over a branch. Naturally, the grapes are just the things to sate his thirst, so he backs up and takes a running leap for them. He misses. He tries again and again, but he simply can't reach them. Finally, he gives up and walks away, mumbling "I'm sure they were sour anyway." The sour grapes concept derived from this tale is the idea that we tend to scorn that which we cannot have.

This fable suggests that when it comes to beauty, adaptation will work its magic on us by making the highly attractive people (grapes) less desirable (sour) to those of us who cannot attain them. But true adaptation can go farther than just changing how we look at the world. Instead of simply rejecting what we can't have, real adaptation implies that we play psychological tricks on ourselves to make reality acceptable.

How exactly do these tricks of adaptation work? One way aesthetically challenged individuals might adapt would be to lower their aesthetic ideals from, say, a 9 or a 10 on the scale of perfection to something more comparable to themselves. Maybe they start finding large noses, baldness, or crooked teeth desirable traits. Someone who has adapted this way might react to the picture of, say, Halle Berry or Orlando Bloom by shrugging his or her shoulders and saying "Eh, I don't like her small, symmetrical nose" or "Blech, all that dark, lustrous hair."

Those of us who aren't gorgeous might utilize a second approach to adaptation. We might not change our sense of beauty, but instead look for other qualities; we might search for, say, a sense of humor or kindness. In the world of "The Fox and the Grapes," this would be equivalent to the fox reevaluating the slightly less juicy-looking berries on the ground and finding them more delicious because he just can't get the grapes from the branch.

How might this work in the dating world? I have a middle-aged, average-looking friend who met her husband on Match.com a few years ago. "Here was someone," she told me, "who was not much to look at. He was bald, overweight, had a lot of body hair, and was several years older than me. But I have learned that these things aren't that important. I wanted somebody who was smart, had great values and a good sense of humor—and he had all this." (Ever notice how "a sense of humor" is almost always code for "unattractive" when someone tries to play matchmaker?)

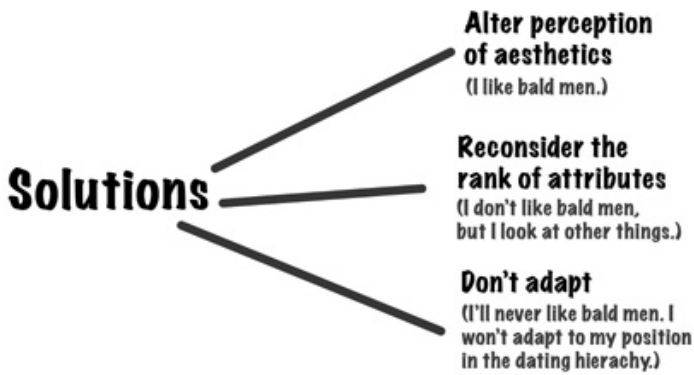
So now we have two ways by which we aesthetically challenged individuals adapt: either we alter our aesthetic perception so that we start to value a lack of perfection, or we reconsider the importance of attributes we find important and unimportant. To put these somewhat more crudely, consider these two possibilities: (a) Do women who attract only short, bald men start liking those attributes in a mate? Or (b) would these women still rather date tall men with lots of hair, but, realizing that this is not possible, they change their focus to nonphysical attributes such as kindness and sense of humor?

In addition to these two paths of adaptation, and despite the incredible capacity of humans to adapt to all sorts of things (see chapter 6, "On Adaptation"), we must also consider the possibility that adaptation does not work in this particular case. That would mean that aesthetically challenged individuals never really acclimate to the limitations that their looks impose on them in the social hierarchy. (If you

are a male over fifty and you still think that every twentysomething woman would love to date you, you are exactly who I am talking about.) Such a failure to adapt is a path to continuous disappointment because, in its absence, less attractive individuals will repeatedly be disappointed when they fail to get the gorgeous mate they think they deserve. And if they settle and marry another aesthetically challenged person, they will always feel that they deserve better—hardly a recipe for a fine romance, let alone a happy relationship.

Which one of the three approaches illustrated in the figure below do you think best describes how aesthetically challenged individuals deal with their constraints?

The three possible ways to deal with our own physical limitations


Solutions
Alter perception of aesthetics
(I like bald men.)
Reconsider the rank of attributes
(I don't like bald men, but I look at other things.)
Don't adapt
(I'll never like bald men. I won't adapt to my position in the dating hierachy.)

My money was on the ability to reprioritize what we look for in a mate, but the process of finding out was interesting in its own right.

Hot or Not?

To learn more about how people adapt to their own less-than-perfect looks, Leonard, George, and I approached two ingenious young men, James Hong and Jim Young, and asked for permission to run a study using their Web site, HOT or NOT.* Upon entering the site, you're greeted with the photo of a man or woman of almost any age (eighteen years of age or older only). Above the photo floats a box with a scale from 1 (NOT) to 10 (HOT). Once you've rated the picture, a new photo of a different person appears as well as the average rating of the person you just rated.

Not only can you rate pictures of other people, but you can also post your own picture on the site to be judged by others.* Leonard, George, and I particularly appreciated this feature because it told us how attractive the people doing the rating were. (Last time I checked, my official rating on HOT or NOT was 6.4. Must be a bad picture.) With this data we could, for example, see how a person who is

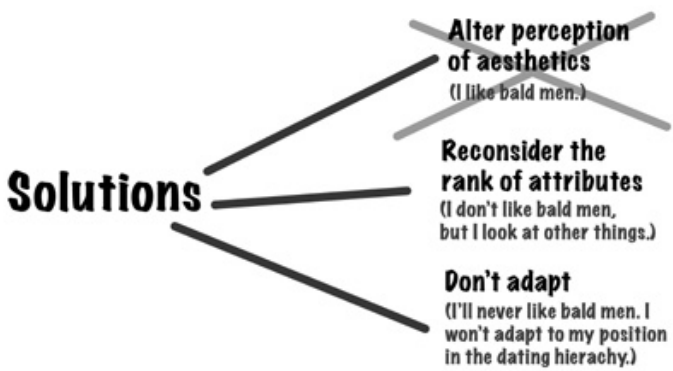
rated as unattractive by users of HOT or NOT (let's say a 2) rates the hotness of others, compared with someone who is rated as very attractive (let's say a 9).

Why would this feature help us? We figured that if people who are aesthetically challenged have *not* adapted, their view of the attractiveness of others would be the same as those of highly attractive people. For example, if adaptation did not take place, a person who is a 2 and a person who is an 8 would both see 9s as 9s and 4s as 4s. On the other hand, if people who are aesthetically challenged have adapted by changing their perspective about the attractiveness of others, their view of hotness would differ from those of highly attractive people. For example, if adaptation had taken place, a person who is a 2 could see a 9 as a 6 and a 4 as a 7, while a person who is an 8 would see a 9 as a 9 and a 4 as a 4. The best news for us was that we could measure it! In short, by examining how one's own attractiveness influences the hotness rating that one gives others, we thought we might discover something about the extent of adaptation. Intrigued by our project, James and Jim provided us with the ratings and dating information of 16,550 HOT or NOT members during a ten-day period. All members of the sample were heterosexual, and the majority (75 percent) were male.*

The first analysis revealed that almost everyone has a common sense of what is beautiful and what isn't. We all find people like Halle Berry and Orlando Bloom "hot," regardless of how we ourselves look; uneven features and buckteeth do not become the new standard of beauty for the aesthetically challenged.

The general agreement on the standard of beauty weighed against the sour grapes theory, but it left two possibilities open. The first was that people adapt by learning to place greater importance on other attributes, and the second was that there is no adaptation to our own aesthetic level.

The three possible ways to deal with our own physical limitations (following the first HOT or NOT study)


Solutions
Alter perception of aesthetics
(I like bald men.)
Reconsider the rank of attributes
(I don't like bald men, but I look at other things.)
Don't adapt
(I'll never like bald men. I won't adapt to my position in the dating hierachy.)

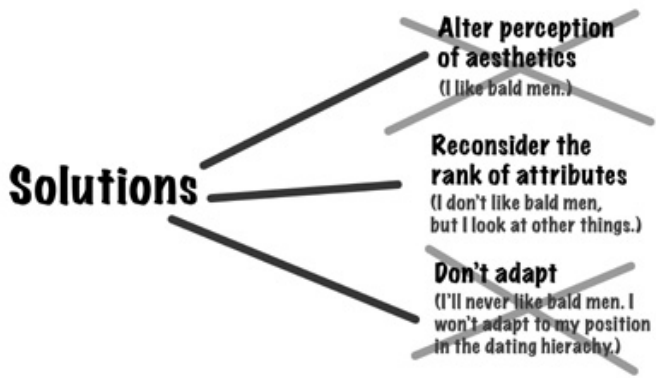
Next, we set about testing the possibility that aesthetically challenged individuals are simply unaware of the limitations placed on us by our lack of

beauty (or at least, that this is how we behave online). To do this, we used a second interesting feature of HOT or NOT called "Meet Me." Assuming you are a man who sees a picture of a woman you'd like to meet, you can click the Meet Me button above the woman's picture. She will then receive a notification saying that you are interested in meeting, accompanied by a bit of information about you. The key is that when using the Meet Me feature, you would not be reacting to the other person only on the basis of aesthetic judgment; you would also gauge whether the invitee would be likely to accept your invitation. (Though an anonymous rejection is much less painful than being turned down face-to-face, it still stings.)

To better understand the usefulness of the Meet Me feature, imagine that you are a somewhat bald, overweight, hairy fellow, albeit with a great sense of humor. As we learned from the ratings of hotness, the way you view the attractiveness of others is uninfluenced by what you see in your mirror. But how would your unfortunate belly and your low level of hotness influence your decisions about whom to pursue? If you were just as likely to try to pursue gorgeous women, it would mean that you are truly unaware of (or at least uninfluenced by) your own physical shortcomings. On the other hand, if you aim a bit lower and try to meet someone closer to your range—despite the fact that you think Halle Berry or Orlando Bloom is a 10—this would mean that you are influenced by your own unattractiveness.

Our data showed that the less hot individuals in our sample were, in fact, very aware of their own level of (un)attractiveness. Though this awareness did not influence how they perceived or judged the attractiveness of others (as shown by their hotness ratings), it did affect the choices they made about whom they asked to meet.

The three possible ways to deal with our own physical limitations (following the first HOT or NOT study and the Meet Me study)


Solutions
Alter perception of aesthetics
(I like bald men.)
Reconsider the rank of attributes
(I don't like bald men, but I look at other things.)
Don't adapt
(I'll never like bald men. I won't adapt to my position in the dating hierarchy.)

Adaptation and the Art of the Speed Date

The data from HOT or NOT eliminated two of our three hypotheses for the process of adaptation to one's own physical attractiveness. One alternative remained: like my middle-aged friend, people do adapt by putting less emphasis on their partner's looks and learn to love other attributes.

However, eliminating two of the alternatives is not equivalent to providing support for the remaining theory. We needed evidence showing that people learn to appreciate compensatory attractions ("Darling, you are so smart / funny / kind / attentive / horoscopically compatible / _____ [fill in the blank]"). Unfortunately, the data from HOT or NOT couldn't help us with this, since it allowed us to measure only one thing (photographic hotness). Searching for another setup that would let us measure that ineffable je ne sais quoi, we turned to the world of speed dating.

Before I tell you about our version of speed dating, allow me to offer the uninitiated a short primer in this contemporary dating ritual (if you are a social science hobbyist, I highly recommend the experience).

In case you haven't noticed, speed dating is everywhere: from posh bars at five-star hotels to vacant classrooms in local elementary schools; from late-afternoon gatherings for the after-work crowd to brunch events for weekend warriors. It makes the quest for everlasting love feel like bargain shopping in a Turkish bazaar. Yet, for all its detractors, speed dating is safer and less potentially humiliating than clubbing, blind dating, being set up by your friends, and other less structured dating arrangements.

The generic speed-dating process is like something designed by a time-and-motion expert of the early twentieth century. A small number of people, generally between the ages of twenty and fifty (in heterosexual events, half of each gender) go to a room set up with two-person tables. Each person registers with the organizers and receives an identification number and a scoring sheet. Half the prospective daters—usually the women—stay at the tables. At the ring of a bell that sounds every four to eight minutes, the men move to the next table in merry-go-round fashion.

While at the table, the daters can talk about anything. Not surprisingly, many initially sheepishly express their amazement at the whole speed-dating process, then make small talk in an effort to fish for useful information without being too blatant. When the bell rings and as the pairings shift, they make decisions: if Bob wants to date Nina, he writes "yes" next to Nina's number on his scoring sheet, and if Nina wants to date Bob, she writes "yes" next to Bob's number on her scoring sheet.

At the end of the event, the organizers collect the scoring sheets and look for mutual matches. If Bob gave both Lonnie and Nina a "yes" and Lonnie gave Bob a "no" but Nina gave Bob a "yes," only Nina and Bob would be given each other's contact information so that they can talk more and maybe even go on a conventional date.

Our version of speed dating was designed to include a few special features. First, before the start of the event, we surveyed each of the participants. We asked them to rate the importance of different criteria—physical attractiveness, intelligence, sense of humor, kindness, confidence, and extroversion—when considering a potential date. We also changed a bit of the speed-dating process itself. At the end of each "date," participants did not move immediately to the next

one. Instead, we asked them to pause and record their ratings for the person they'd just met, using the same attributes (physical attractiveness, intelligence, sense of humor, kindness, confidence, and extroversion). We also asked them to tell us if they wanted to see this person again.

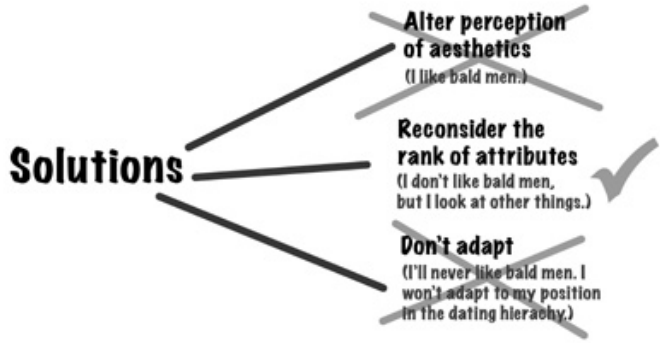
These measures gave us three types of data. The pre-speed-dating survey told us which attributes each person was generally looking for in a romantic partner. From the postdate responses, we discovered how they rated each person they had met on these attributes. We also knew whether they wanted to meet each person for a real date in the near future.

So, on to our main question: Would the aesthetically challenged individuals place as high a premium on looks as the beautiful people did, showing that they did not adapt? Or would they place more importance on other attributes such as sense of humor, showing that they adapted by changing what they were looking for in a partner?

First, we examined participants' responses regarding their general preferences—the ones they provided before the event started. In terms of what they were looking for in a romantic partner, those who were more attractive cared more about attractiveness, while the less attractive people cared more about other characteristics (intelligence, sense of humor, and kindness). This finding was our first evidence that aesthetically challenged people reprioritize their requirements in dating. Next, we examined how each speed dater evaluated each of their partners during the event itself and how this evaluation translated to a desire to meet for a real date. Here, too, we saw the same pattern: the aesthetically challenged people were much more interested in going on another date with those they thought had a sense of humor or some other nonphysical characteristic, while the attractive people were much more likely to want to go on a date with someone they evaluated as good-looking.

If we take the findings from the HOT or NOT, the Meet Me, and the speed-dating experiments, the data suggest that while our own level of attractiveness does not change our aesthetic tastes, it does have a large effect on our priorities. Simply put, less attractive people learn to view nonphysical attributes as more important.

The three possible ways to deal with our own physical limitations (after the first HOT or NOT study, the Meet Me study, and the speed-dating study)


Solutions
Alter perception of aesthetics
(I like bald men.)
Reconsider the rank of attributes
(I don't like bald men, but I look at other things.)
Don't adapt
(I'll never like bald men. I won't adapt to my position in the dating hierarchy.)

Of course, this leads to the question of whether aesthetically challenged individuals are "deeper" because they care less about beauty and more about other characteristics. Frankly, that is a debate I'd rather avoid. After all, if the teenage frog becomes an adult prince, he might become just as eager to use beauty as his main criterion for dating as the other princes are. Regardless of our value judgments about the real importance of beauty, it is clear that the process of reprioritization helps us adapt. In the end, we all have to make peace with who we are and what we have to offer, and ultimately, adapting and adjusting well are key to being happier.

THE HIS AND HERS PERSPECTIVE

No investigation into the dating world would be complete without some examination of gender differences. The results I've described so far were combined across males and females, and you probably suspect that men and women differ in their responses to attractiveness. Right?

Right. As it turns out, most of the gender differences in our HOT or NOT study fell into line with common stereotypes about dating and gender. Take, for instance, the commonly held belief that men are less selective in dating than women. It turns out that this is not just a stereotype: men were 240 percent more likely to send Meet Me invitations to potential females than vice versa.

The data also confirmed the casual observation that men care more about the hotness of women than the other way around, which also relates to the finding that men are less concerned with their own level of attractiveness. On top of that, men were also more hopeful than women—they looked very carefully at the hotness of the women they were "checking out," and they were more likely to aim for women who were "out of their league," meaning several numerals higher on the HOT or NOT scale. Incidentally, the male tendency to ask many women on dates, and to aim higher (which some may see as negative), can euphemistically be called "men's open-mindedness in dating."

Against All Assortative Mating Odds

We all have some wonderful features and some undesirable flaws. We usually learn to live with them from a young age and end up being generally pleased with our

place in society and in the social hierarchy. The difference for someone like me was that I grew up with a certain set of beliefs about myself, and suddenly I had to face a new reality without the opportunity to adjust slowly over a long period of time. I suspect that this instant change made my romantic challenges more apparent, and it also made me look at the dating market in a slightly colder and more distant way.

For years after my injury, I agonized over the effects that my injury would have on my romantic future. I was certain that my scars would dramatically change my position in the assortative mating hierarchy, but I couldn't help feeling that this was wrong in some ways. On one hand, I realized that the dating market operates in many ways much like other markets and that my market value had plummeted overnight. At the same time, I could not shake the deep feeling that I hadn't really changed that much and that my value reduction was unfounded.

In one attempt to understand my feelings about this, I asked myself how I would respond if I had been perfectly healthy and someone who had suffered an injury similar to mine asked me out on a date. Would I care? Would I be less likely to date that person because of her injury? I must admit that I didn't like my answer to this question, and it made me wonder what I could possibly expect from women. I came to the conclusion that I would have to settle, and this deeply depressed me. I hated the idea that women who had been willing to date me before my injury would no longer see me as a potential romantic partner. And I dreaded the thought of settling, both on my account and for the settlee. It just didn't seem like a recipe for happiness.

All these issues were resolved while I was in graduate school at the University of North Carolina at Chapel Hill. One fine day, the chair of the psychology department appointed me to the colloquium committee. I can't really remember anything I did during the committee's meetings other than create the logo for the announcements, but I do remember sitting across the table from one of the most amazing people I have ever met: Sumi. By any stretch of assortative mating imaginable, she should have had nothing to do with me. We started spending more and more time together. We became friends. She appreciated my sense of humor and, in what I can only call a magical transition, at some point somehow agreed to look at me as a potential romantic partner.

Fifteen years and two children later, and with the help of the HOT or NOT data, I now realize how lucky I am that women pay less attention to physical appearance than men do (thank you, my fair readers). I also came to believe that, as unsentimental as it sounds, Stephen Stills's song has a lot of truth to it. Far from advocating infidelity, "Love the One You're With" suggests that we have the ability to discover and love the characteristics of our partner. Instead of merely settling for someone with scars, a few extra pounds, buckteeth, or bad hair, we really do end up changing our perspectives, and in the process increasing our love of the person who is behind the mask of their face and body. Another victory for the human ability to adapt!

Chapter 8
When a Market Fails

An Example from Online Dating

In centuries past, a yenta, or matchmaker, performed a very important task in traditional society. A man or woman (and their parents) would tell the yenta to "find me a find, catch me a catch," as the song in *Fiddler on the Roof* put it. To narrow the playing field for her clients, the yenta made sure she knew everything possible about the young people and their families (which is why the word "yenta" eventually became synonymous with "gossip" or "blabbermouth"). Once she found a few likely fits, she introduced the prospective husbands and wives and their families to each other. The yenta ran an efficient, viable business, and she was paid for her services as a matchmaker (or "market maker" in economics-speak) who brought people together.

Fast-forward to the mid-1990s—a world without yentas (and, in most Western societies, without arranged marriages) but before the rise of online dating. Ideals of romance and individual freedom prevailed, which also meant that each person who wanted to find a mate was pretty much left to his or her own devices. For example, I remember well the trials of a friend I'll call Seth, who was smart, funny, and more or less good-looking. He was also a new professor, which meant that he worked long hours in order to prove that he had the right stuff to achieve tenure. He rarely left the office before eight or nine at night and spent most of his weekends there as well (I know, because my office was next to his). Meanwhile, his mother would call him every weekend and needle him. "Son, you work too hard," she would say. "When are you going to take some time to find a nice girl? Soon I'll be too old to enjoy my grandchildren!"

Since Seth was very smart and talented, it was within his power to meet his professional goals. But his romantic goals seemed out of reach. Having always been the scholarly type, he could not suddenly become a barfly. He found the idea of placing or answering a personal ad distasteful. His few colleagues in the university town he had recently moved to were not particularly social, so he didn't go to many dinner parties. There were plenty of nice female graduate students who, judging by the way they glanced at him, would undoubtedly have been happy to date him, but if he had actually tried to do so, the university would have frowned upon it (in most settings, office romance is similarly discouraged).

Seth tried to participate in activities for singles. He tried ballroom dancing and hiking; he even checked out one religious organization. But he didn't really enjoy any of those activities; the other people didn't seem to enjoy them much either. "The hiking club was particularly strange," he later told me. "It was obvious that no one there cared to explore the great outdoors. They only wanted to find potential romantic partners who enjoyed hiking, because they assumed that someone who likes hiking will be a good person in many other ways."

Poor Seth. Here was a great guy who could have been very happy with the right woman, but there was no efficient way to find her. (Don't worry. After a few lonely years of searching, he finally did meet his mate.) The point is this: in the absence of an efficient coordinator such as a yenta to help him, Seth was a victim of market failure. In fact, without exaggerating too much, I think that the market for single people is one of the most egregious market failures in Western society.

SETH'S TRAVAILS OCCURRED before the emergence of online dating sites, which are wonderful and necessary markets in principle. But before we examine this modern version of a yenta, let's consider how markets function in general. Essentially, markets are coordination mechanisms that allow people to save time while achieving their goals. Given their usefulness, markets have become increasingly centralized and organized. Consider what makes supermarkets super. They save you the hassle of having to walk or drive to the baker, butcher, vegetable stand, pet store, and drugstore; you can efficiently buy all the things you need for the week in one convenient place. More generally, markets are an integral and important part of each of our lives, down to the most personal choices.

In addition to markets for food, housing, jobs, and miscellaneous items (also known as eBay), there are also financial markets. A bank, for example, is a central place that facilitates finding, lending, and borrowing. Other market players, such as real estate brokers, for example, try in a yenta-like way to understand the needs of sellers and buyers and match them properly. Even the *Kelley Blue Book*, which suggests market prices for used cars, can be thought of as a market maker because it gives buyers and sellers a starting point for negotiation. In sum, markets are an incredibly important part of the economy.

Of course, markets continuously remind us that they can also fail, sometimes dramatically—as Enron demonstrated in the energy market, and as many banking institutions showed in the subprime mortgage crisis of 2008. Overall, however, markets that allow coordination among people are fundamentally beneficial. (Obviously, it would be much better if we could design markets in ways that would provide us with their benefits but not their drawbacks.)

THE MARKET FOR single people is one area of life in which we have gradually moved away from a central market and into a situation in which each individual must take care of him- or herself. To realize how complex dating can be without an organized market, imagine a town in which precisely one thousand singles live, all of whom want to get married (sounds a little like an idea for a reality television show, actually). In this small market—assuming there is no yenta—how do you determine who is the ideal match for whom? How would you pair each couple in a way that would guarantee that they would not only like each other but stay together? It would be ideal for everyone to date everyone else a few times to find their ideal match, but ruling out a mega-speed-dating event, that would take a very long time.

With this in mind, allow me to reflect on the current circumstances for singles in American society. Young people in the United States relocate more than ever for the sake of school and careers. Friendships and romantic attachments that flourished in high school are abruptly cut off as the fledglings leave home. Much

like high school, college offers a milieu for friendship and romances, but those often end as graduates strike out for jobs in new cities. (Today, thanks to the Internet, companies frequently recruit across vast, geographically dispersed distances, which means that many people wind up working far away from their friends and families.)

Once graduates land their far-flung positions, their free time is limited. Young, relatively inexperienced professionals have to put in long hours to prove themselves, particularly in the competitive job market. Interoffice romances are generally inadvisable, if not prohibited. Most young people change jobs frequently, so they uproot themselves, yet again disrupting their social lives. With every move, their developing direct and indirect relationships are curtailed—which further hurts their chances of finding someone, because friends often introduce one another to prospective mates. Overall, this means that the improvement in the market efficiency for young professionals has come, to a certain extent, at the cost of market inefficiency for young romantic partners.

Enter Online Dating

I was troubled by the difficulties of Seth and some other friends until the advent of online dating. I was very excited to hear about sites like Match.com, eHarmony, and JDate.com. "What a wonderful fix to the problem of the singles market," I thought. Curious about how the process worked, I delved into the world of online dating sites.

How exactly do these sites work? Let's take a hypothetical lonely heart named Michelle. She signs up for a service by completing a questionnaire about herself and her preferences. Each service has its own version of these questions, but they all ask for basic demographic information (age, location, income, and so on) as well as some measure of Michelle's personal values, attitudes, and lifestyle. The questionnaire also asks Michelle for her preferences: What kind of relationship is she looking for? What does she want in a prospective mate? Michelle reveals her age and weight.* She states that she is an easygoing, fun vegetarian and that she's looking for a committed relationship with a tall, educated, rich vegetarian man. She also writes a short, more personal description of herself. Finally, she uploads pictures of herself for others to see.

Once Michelle has completed these steps, she is ready to go window-shopping for soul mates. From among the profiles the system suggests for her, Michelle chooses a few men for more detailed investigation. She reads their profiles, checks out their photos, and, if she's interested, e-mails them through the service. If the interest is mutual, the two of them correspond for a bit. If all goes well, they arrange a real-life meeting. (The commonly used term "online dating" is, of course, misleading. Yes, people sort through profiles online and correspond with each other via e-mail, but all the real dating happens in the real, offline world.)

Once I learned what the real process of online dating involves, my enthusiasm for this potentially valuable market turned into disappointment. As much as the singles' market needed mending, it seemed to me that the way online dating markets approached the problem did not promise a good solution to the singles problem. How could all the multiple-choice questions, checklists, and criteria accurately represent their human subjects? After all, we are more than the sum of

our parts (with a few exceptions, of course). We are more than height, weight, religion, and income. Others judge us on the basis of general subjective and aesthetic attributes, such as our manner of speaking and our sense of humor. We are also a scent, a sparkle of the eye, a sweep of the hand, the sound of a laugh, and the knit of a brow—ineffable qualities that can't easily be captured in a database.

The fundamental problem is that online dating sites treat their users as searchable goods, as though they were digital cameras that can be fully described by a few attributes such as megapixels, lens aperture, and memory size. But in reality, if prospective romantic partners could possibly be considered as "products," they would be closer to what economists call "experience goods." Like dining experiences, perfumes, and art, people can't be anatomized easily and effectively in the way that these dating Web sites imply. Basically, trying to understand what happens in dating without taking into account the nuances of attraction and romance is like trying to understand American football by analyzing the *x*'s, *o*'s and arrows in a playbook or trying to understand how a cookie will taste by reading its nutrition label.

So why do online dating sites demand that people describe themselves and their ideal partners according to quantifiable attributes? I suspect that they pick this modus operandi because it's relatively easy to translate words like "Protestant," "liberal," "5 feet, 8 inches tall," "135 lbs.," "fit," and "professional" into a searchable database. But could it be that, in their desire to make the system compatible with what computers can do well, online dating sites force our often nebulous conception of an ideal partner to conform to a set of simple parameters—and in the process make the whole system less useful?

To answer these questions, Jeana Frost (a former PhD student in the MIT Media Lab and currently a social entrepreneur), Zoë Chance (a PhD student at Harvard), Mike Norton, and I set up our first online dating study. We placed a banner ad on an online dating site that said "Click Here to Participate in an MIT Study on Dating." We soon had lots of participants telling us about their dating experiences. They answered questions about how many hours they spent searching profiles of prospective dates (again, using searchable qualities such as height and income); how much time they spent in e-mail conversations with those who seemed like a good fit; and how many face-to-face (offline) meetings they ended up having.

We found that people spent an average of 5.2 hours per week searching profiles and 6.7 hours per week e-mailing potential partners, for a total of nearly 12 hours a week in the screening stage alone. What was the payoff for all this activity, you ask? Our survey participants spent a mere 1.8 hours a week actually meeting any prospective partners in the real world, and most of this led to nothing more than a single, semifrustrating meeting for coffee.

Talk about market failures. A ratio worse than 6:1 speaks for itself. Imagine driving six hours in order to spend one hour at the beach with a friend (or, even worse, with someone you don't really know and are not sure you will like). Given these odds, it seems hard to explain why anyone in their right mind would intentionally spend time on online dating.

Of course, you might argue that the online portion of dating is in itself enjoyable—perhaps like window-shopping—so we decided to ask about that, too.

We asked online daters to compare their experiences online dating, offline dating, and forgetting about the first two and watching a movie at home instead. Participants rated offline dating as more exciting than online dating. And guess where they ranked the movie? You guessed it—they were so disenchanted with the online dating experience that they said they'd rather curl up on the couch watching, say, *You've Got Mail*.

So it appeared from our initial look that so-called online dating is not as fun as one might guess. In fact, online dating is a misnomer. If you called the activity something more accurate, such as "online searching and blurb writing," it might be a better description of the experience.

Our survey still didn't tell us whether the attempt to reduce people to searchable attributes was the culprit. To test this issue more directly, we created a follow-up study. This time, we simply asked online daters to describe the attributes and qualities that they considered most important in selecting romantic partners. We then gave this list of characteristics to an independent group of coders (a coder is a research assistant who categorizes open-ended responses according to preset criteria). We asked the coders to categorize each response: Was the attribute easily measurable and searchable by a computer algorithm (for example, height, weight, eye and hair color, education level, and so on)? Or was it experiential and harder to search for (say, a love of Monty Python skits or a passion for golden retrievers)? The results showed that our experienced online daters were about three times as interested in experiential than in searchable attributes, and this tendency was even stronger for people who said they sought long-term, rather than short-term, relationships. Combined, the results of our studies suggested that using searchable attributes for online dating is unnatural, even for people who have lots of practice with this type of activity.

Sadly, this does not bode well for online dating. Online daters aren't particularly excited about the activity; they find the search process difficult, time-consuming, unintuitive, and only slightly informative. Finally, they have little, if any, fun "dating" online. In the end, they expend an awful lot of effort working with a tool that has a questionable ability to accomplish its fundamental purpose.

Online Dating Going Awry: Scott's Story

Think about the most organized people you know. You might know a woman who organizes her wardrobe by season, color, size, and dressiness. Or on the other, less fussy end of the spectrum, a young man who divides his laundry into categories such as "day old," "okay for home," "okay for gym," and "rancid." Across the board, people can be surprisingly inventive when it comes to systematizing their lives for maximal use, ease, and comfort.

I once met a student at MIT who adopted an extraordinary method for sorting potential dates into categories. Scott's objective was to find the perfect woman, and he used a very complex, time-consuming system to accomplish his goal. Every day, he went online to search for at least ten women who met his criteria: among other attributes, he wanted someone who had a college degree, demonstrated athleticism, and was fluent in a language other than English. Once he found qualified candidates, he sent them one of three form letters containing a set of

questions about what kind of music they liked, where they had gone to school, what their favorite books were, and so on. If they answered the questions to his satisfaction, he would advance them to the second step of a four-stage filtering process.

In stage two, Scott sent another form letter containing more questions. Again, "correct" responses resulted in advancement to the next level. In stage three, the woman would receive a phone call, during which she would answer more questions. If the conversation went well, he would move her to stage four, a meeting for coffee.

Scott also developed an elaborate system to keep track of his prospective—and rapidly accumulating—potential mates. Being a very smart, analytical fellow, he logged the results in a spreadsheet that listed each woman's name, the stage of the relationship, and her cumulative score, which was based on her answers to the different questions and her overall potential as his romantic partner. The more women he logged into his spreadsheet, he thought, the better his prospects for finding the woman of his dreams. Scott was extremely disciplined about this process.

After a few years of searching, Scott had coffee with Angela. After meeting her, he was sure that Angela was ideal in every way. She fulfilled his criteria, and, even more important, she seemed to like him. Scott was elated.

Having achieved his goal, Scott felt that his elaborate system was no longer necessary, but he did not want it to go to waste. He heard that I ran studies on dating behavior, so he stopped by my office one day and introduced himself. He described his system and said that he knew it could be useful for my research. Then he handed me a disk containing all his data from the entire procedure, including his form letters, questions, and, of course, the data he'd collected on all the candidates he had filtered. I was amazed and a little horrified to find that he had amassed data on more than ten thousand women.

Sadly, though perhaps not surprisingly, this tale had an unhappy ending. Two weeks later, I learned that Scott's fastidiously chosen beloved had turned down his marriage proposal. Moreover, in his Herculean effort to keep anyone from slipping through his net, Scott had become so committed to his time-consuming process of evaluating women that he hadn't had time for a real social life and was left without a shoulder to cry on.

Scott, as it turned out, was just another casualty of a market gone awry.

Experiments in Virtual Dating

The results of our initial experiment were rather depressing. But, ever the optimist, I still hoped that by better understanding the problem, we could come up with improved mechanisms for online interaction. Was there a way to make online dating more enjoyable while improving people's odds of finding a suitable match?

We took a step back and thought about regular dating, that odd and complex ritual in which most of us participate at some point in our lives. From an evolutionary perspective, we would expect dating to be a useful process for prospective mates to get to know each other—one that has been tried and improved over the years. And if regular (offline) dating is a good mechanism—or at least the best one we have so far—why not use it as the starting point of our

quest to create a better online dating experience?

If you think about how the standard practice of dating works, it is clear that it is not about two people sitting together in an empty space and focusing solely on each other or sharing an intense objection to the cold, rainy weather. It's about experiencing something together: two people watching a movie, enjoying a meal, meeting at a dinner party or a museum, and so on. In other words, dating is about experiencing something with another person in an environment that is a catalyst for the interaction. By meeting someone at an art opening, a sporting event, or a zoo, we can see how that person interacts with the world around us—are they the type to treat a waitress badly and not tip or are they patient and considerate? We make observations that reveal information about what life in the real world might be like with the other person.

Assuming that the natural evolution of dating holds more wisdom than the engineers at eHarmony, we decided that we would try to bring some elements from real-world dating into online dating. Hoping to simulate the way people interact in real life, we set up a simple virtual dating site using "Chat Circles," a virtual environment created by Fernanda Viégas and Judith Donath at the MIT Media Lab. After logging on to this site, participants picked out a shape (a square, triangle, circle, etc.) and a color (red, green, yellow, blue, purple, etc.). Entering the virtual space as, say, a red circle, the participant would move a mouse to explore objects within the space. The objects included images of people, items such as shoes, movie clips, and some abstract art. Participants could also see other shapes that represented other daters. When two shapes moved close to each other, they could start an instant-message conversation. Obviously, this environment could not represent the full range of interactions one could experience on a real date, but we wanted to see how our version of virtual dating worked.

We hoped that our shapes would use the simulated galleries not only to talk about themselves but also to discuss the images they saw. As we expected, the resulting discussions resembled, rather closely, what happens in regular dating. ("Do you like that painting?" "Not particularly. I prefer Matisse.")

OUR MAIN GOAL was to compare our (somewhat impoverished) virtual dating environment with a standard online one. To that end, we asked a group of eager daters to engage in one regular online date with another person (a process that entailed reading about another person's typical vital statistics, answering questions about relationship goals, writing an open-ended personal essay, and writing to the other person). We also asked them to participate in one virtual date with a different person (which required the daters to explore the space together, look at different images, and text-chat with each other). After each of our participants met one person using a standard online dating process and another person using the virtual dating experience, we were ready for the showdown.

To set the stage for the competition between these two approaches, we organized a speed-dating event like the one described in chapter 7, "Hot or Not?" In our experimental speed-dating event, participants had an opportunity to meet face-to-face with a number of people, including the person they'd met in the virtual world and the person they'd met in our standard online dating scenario. Our speed-dating event differed slightly from the standard experience in another way, too. After each four-minute interaction at the tables, participants answered

the following questions about the person they had just met:

How much do you like this person?
How similar do you think you are to this person?
How exciting do you find this person?
How comfortable do you feel with this person?

Our participants scored each question on a scale from 1 to 10, where 1 meant "not at all" and 10 meant "very." As is usual in speed-dating events, we also asked them to tell us whether they were interested in meeting the person again in the future.

To recap, the experiment had three parts. First, each of the participants went on one regular online date and one virtual date. Next, they went speed-dating with multiple people, including the person they met online and the person with whom they'd gone on the virtual date. (We didn't point out people they'd met before, and we left it for them to recognize—or not—their past encounters.) Finally, at the end of each speed date, they told us what they thought about their dating partner and whether they would like to see that person again on a real-life date. We wanted to see whether the initial experience—either virtual or regular online dating—would make a real-life date more likely.

We found that both men and women liked their speed-dating partner more if they'd first met during the virtual date. In fact, they were about twice as likely to be interested in a real date after the virtual date than after the regular online one.

Why was the virtual dating approach so much more successful? I suspect the answer is that the basic structure used in our virtual dating world was much more compatible with another, much older structure: the human brain. In our virtual world, people made the same types of judgments about experiences and people that we are used to making in our daily lives. Because these judgments were more compatible with the way we naturally process information in real life, the virtual interactions were more useful and informative.

To illustrate, imagine that you are a single man who is interested in meeting a woman for a long-term relationship, and you go out to dinner with a woman named Janet. She is petite, has brown hair, brown eyes, and a nice smile, plays violin, likes movies, and is soft-spoken; perhaps she's a little introverted. As you sip your wine, you ask yourself, "How much do I like her?" You might even ask yourself, "How likely am I to want to stay with her in the short-, medium-, and long-term future?"

Then you go on a date with a woman named Julia. Janet and Julia are different in many ways. Julia is taller and more extroverted than Janet, has an MBA and a soft laugh, and likes to go sailing. You may sense that you like Janet more than Julia and that you want to spend more time with her, but it's not easy to say why or to isolate the few variables that make you prefer her. Is it her body shape? The way she smiles? Is it her sense of humor? You can't put your finger on what it is about Janet, but you have a strong gut feeling about it.*

On top of that, even if both Janet and Julia accurately described themselves as

having a sense of humor, what strikes one person as funny is not always funny to another. People who enjoy the Three Stooges may not appreciate *Monty Python's Flying Circus*. David Letterman fans may not think much of *The Office*. Fans of any of these can rightfully claim to have a good sense of humor, but only by experiencing something with another person—say, watching *Saturday Night Live* together, either in person or in a virtual world—can you tell whether your senses of humor are compatible.

SPEED DATING FOR OLDER ADULTS

By the way, having an external object to react to works equally well in not-so-romantic encounters. Some time ago, Jeana Frost and I tried to run some speed-dating events for older (age sixty-five and above) adults. The objective was to open up the social circles of people who had just moved to a retirement community and, by doing so, improve their happiness and health.* We expected our speed-dating events to be a great success, but the first few were failures. Lots of people registered for them, yet when they sat at tables and faced each other, the discussions were slow to start and awkward.

Why did this happen? In standard speed-dating events, the discussions aren't particularly interesting ("Where did you go to school?" "What do you do?"), but everyone understands the basic purpose—they're trying to figure out if the person they are talking to might be a romantic fit. In contrast, our older participants didn't all share this underlying goal. Though some hoped for a romantic relationship, others were more interested in making friends. This multiplicity of goals made the whole process difficult, awkward, and ultimately unsatisfying.

Having realized what was going wrong, Jeana proposed that, for our next event, each person bring a personally important object (for example, a souvenir or a photograph) to use as a discussion starter. This time we could not stop people from talking. Their discussions were deeper and more interesting. The events resulted in many friendships. In this case, too, the presence of an external object helped catalyze the discussions and improve the outcome.

It's interesting how sometimes all we need is something—anything—to get a good thing started.

At the end of the day, people are the marketing-terminology equivalent of experience goods. In the same way that the chemical composition of broccoli or pecan pie is not going to help us better understand what the real thing tastes like, breaking people up into their individual attributes is not very helpful in figuring out what it might be like to spend time or live with them. This is the essence of the problem with a market that attempts to turn people into a list of searchable attributes. Though words such as "eyes: brown" are easy to type and search, we don't naturally view and evaluate potential romantic partners that way. This is also where the advantage of virtual dating comes into focus. It allows for more nuance and meaning and lets us use the same types of judgments that we are used to making in our daily lives.

In the end, our research findings suggest that the online market for single people should be structured with an understanding of what people can and can't naturally do. It should use technology in ways that are congruent with what we are naturally good at and help us with the tasks that don't fit with our innate abilities.

Designing Web Sites for Homer Simpson

Despite the invention of online dating sites, I think that the continued failure of the

market for singles demonstrates the importance of social science. To be clear: I am all in favor of online dating. I just think it needs to be done in a more humanly compatible way.

Consider the following: when designers design physical products—shoes, belts, pants, cups, chairs, and so on—they take people's physical limitations into account. They try to understand what human beings can and cannot do, so they create and manufacture products that can be used by all of us in our daily life (with a few notable exceptions, of course).

But when people design intangibles such as health insurance, savings plans, retirement plans, and even online dating sites, they somehow forget about people's built-in limitations. Perhaps these designers are just overly sanguine about our abilities; they seem to assume that we are like *Star Trek*'s hyperrational Mr. Spock. Creators of intangible products and services assume that we know our own minds perfectly, can compute everything, compare all options, and always choose the best and most appropriate course of action.

But what if—as behavioral economics has shown in general and as we have shown for dating in particular—we are limited in the way we use and understand information? What if we are more like the fallible, myopic, vindictive, emotional, biased Homer Simpson than like Mr. Spock? This notion may seem depressing, but if we understand our limitations and take them into account, we can design a better world, starting with improved information-based products and services, such as online dating.

Building an online dating site for perfectly rational beings can be a fun intellectual exercise. But if the designers of such a Web site really want to create something that is useful for normal—albeit somewhat limited—people who are looking for a mate, they should first try to understand human limitations and use them as a starting point for their design. After all, even our rather simplistic and improvised virtual dating environment almost doubled the odds of face-to-face meetings. This suggests that it's not all that difficult to take human capabilities and weaknesses into account. I would bet that an online dating site that incorporated humanly compatible design would not only be a big hit but would also help bring real, flesh-and-blood, compatible people together as well.

More generally, this examination of the online dating market suggests that markets can indeed be wonderful and useful; but to get them to achieve their full potential, we must structure them in a way that is compatible with what people can and can't naturally do.

"So what are singles to do while we are all waiting for better online dating sites?"

That was the question put to me by a good friend who wanted to help out Sarah, a woman who works in his office. Obviously, I'm not a qualified yenta. But in the end, I do think that there are a few personal lessons to be learned from this research.

First, given the relative success of our virtual dating experience, Sarah should try to make her online dating interactions a bit more like regular dating. She can try to engage her romantic prospects in conversations about things she likes to see and do. Second, she might go a step farther and create her own version of virtual dating by pointing the person she is chatting with to an interesting Web site and, much as in real dating, experience something together. If so inclined, she might

even suggest that they try to play some online games together, explore magical kingdoms, slay dragons, and solve problems. All of which could give them a better understanding of and insight into each other. What matters most is that she make an effort to do things she enjoys with other single people and this way learn more about her compatibility with them.

From Dating Web Sites to Products and Markets

Meanwhile, what does the failure of the online dating market imply about other failures? Fundamentally, the online dating market is a failure of product design.

Allow me to explain. Basically, when a product doesn't work well for us, it misses the intended mark. Just as online dating sites that try to reduce humans to a set of descriptive words too often fail to make real matches, companies disappoint when they don't translate what they're offering into something compatible with the way we think. Take computers, for example. Most of us just want a computer that is reliable, runs fast, and can help us do the thing we want to do. We couldn't care less about the amount of RAM, processor speed, or bus speed (of course, some people really care about these things), but that's the way manufacturers describe their computers, not really helping us understand how the experience with a particular computer will feel.

As another example, consider online retirement calculators that are supposedly designed to help us figure out how much to save for retirement. After we enter data about our basic expenses, the calculator tells us that we will need, say, $3.2 million in our retirement account. Unfortunately, we don't really know what kind of lifestyle we might have with that amount or what we can expect if we have only $2.7 million or $1.4 million (not to mention $540,000 or $206,000). Nor does it help us imagine what it would be like to live to a hundred if we have very little in our savings accounts by the age of seventy. The calculator simply returns a number (mostly out of our reach) that doesn't translate into anything that we can visualize or comprehend, and in doing so it also doesn't motivate us to try harder to save more.

Likewise, consider the way insurance companies describe their products in terms of deductibles, limits, and co-pays. What does that really mean when we end up having to get treatment for cancer? What does a "maximum liability" tell us about how much we'll really be out of pocket if we and other people are badly injured in a car accident? Then there's that wonderful insurance product called an annuity, which is supposed to protect you against running out of money should you live to be a hundred. Theoretically, buying an annuity means that you will be repaid in the form of a fixed salary for life (essentially, Social Security is a sort of annuity system). In principle, annuities make a lot of sense, but sadly, it's very difficult to compute how much they are worth to us. Worse, the people who sell them are the insurance industry's equivalent of sleazy used-car salesmen. (Though I'm sure there are exceptions, I haven't run into them.) They use the difficulty of determining how much annuities are really worth to overcharge their customers. The result is that most annuities are a rip-off and this very important market doesn't work well at all.

So how can markets be made more efficient and effective? Here's an example of social loans: Let's say you need to scrabble together money for a car. Many

companies have now set up social lending constructs that allow families and friends to borrow and lend from each other, which cuts the middlemen (banks) out of the equation, reduces the risk of nonpayment, and provides better interest rates to both the lender and borrower. The companies that manage these loans take no risk and deal with the logistics of the loan behind the scenes. Everyone but the banks benefits.

The bottom line is this: even when markets are not working for us, we are not utterly helpless. We can try to solve a problem by figuring out how a market is not providing the help we expect from it and take some steps to alleviate the problem (creating our own virtual dating experience, lending money to relatives, etc.). We can also try to solve the problem more generally and come up with products that are designed with an eye for meeting the needs of prospective customers. Sadly, but also happily, the opportunities for such improved products and services are everywhere.

Chapter 9
On Empathy and Emotion

Why We Respond to One Person Who Needs Help but Not to Many

Few Americans who were alive and cognizant in 1987 could forget the "Baby Jessica" saga. Jessica McClure was an eighteen-month-old girl in Midland, Texas, who was playing in the backyard at her aunt's house when she fell twenty-two feet down an abandoned water well. She was wedged in the dark, subterranean crevice for 58½ hours, but the infinitesimally drawn-out media coverage made it seem as if the ordeal dragged on for weeks. The drama brought people together. Oil drillers–cum–rescue workers, neighbors, and reporters in Midland stood daily vigil, as did television viewers around the globe. The whole world followed every inch of progress in the rescue effort. There was deep consternation when rescuers discovered that Jessica's right foot was wedged between rocks. There was universal delight when workers reported that she'd sung along to the Humpty-Dumpty nursery rhyme that was piped down to her by a speaker lowered into the shaft (an interesting choice, considering the circumstances). Finally, there was the tearful relief when the little girl was finally pulled out of the laboriously drilled parallel shaft.

In the aftermath of the rescue, the McClure family received more than $700,000 in donations for Jessica. *Variety* and *People* magazine ran gripping stories on her. Scott Shaw of the *Odessa American* newspaper won the 1988 Pulitzer Prize for his photograph of the swaddled toddler in the arms of one of her rescuers. There was a TV movie called *Everybody's Baby: The Rescue of Jessica McClure*, starring Beau Bridges and Patty Duke, and the songwriters Bobby George Dynes and Jeff Roach immortalized her in ballads.

Of course, Jessica and her parents suffered a great deal. But why, at the end of the day, did Baby Jessica garner more CNN coverage than the 1994 genocide in Rwanda, during which 800,000 people—including many babies—were brutally murdered in a hundred days? And why did our hearts go out to the little girl in Texas so much more readily than to the victims of mass killings and starvation in Darfur, Zimbabwe, and Congo? To broaden the question a bit, why do we jump out of our chairs and write checks to help one person, while we often feel no great compulsion to act in the face of other tragedies that are in fact more atrocious and involve many more people?

It's a complex topic and one that has daunted philosophers, religious thinkers, writers, and social scientists since time immemorial. Many forces contribute to a general apathy toward large tragedies. They include a lack of information as the event is unfolding, racism, and the fact that pain on the other side of the world doesn't register as readily as, say, our neighbors'. Another big factor, it seems, has to do with the sheer size of the tragedy—a concept expressed by none other than

Joseph Stalin when he said, “One man’s death is a tragedy, but a million deaths is a statistic.” Stalin’s polar opposite, Mother Teresa, expressed the same sentiment when she said, “If I look at the mass, I will never act. If I look at one, I will.” If Stalin and Mother Teresa not only agreed (albeit for vastly different reasons) but were also correct on this score, it means that though we may possess incredible sensitivity to the suffering of one individual, we are generally (and disturbingly) apathetic to the suffering of many.

Can it really be that we care less about a tragedy as the number of sufferers increases? This is a depressing thought, and I will forewarn you that what follows will not make for cheerful reading—but, as is the case with many other human problems, it is important to understand what really drives our behavior.

The Identifiable Victim Effect

To better understand why we respond more to individual suffering than to that of the masses, allow me to walk you through an experiment carried out by Deborah Small (a professor at the University of Pennsylvania), George Loewenstein, and Paul Slovic (founder and president of Decision Research). Deb, George, and Paul gave participants $5 for completing some questionnaires. Once the participants had the money in hand, they were given information about a problem related to food shortage and asked how much of their $5 they wanted to donate to fight this crisis.

As you must have guessed, the information about the food shortage was presented to different people in different ways. One group, which was called the statistical condition, read the following:

> Food shortages in Malawi are affecting more than 3 million children. In Zambia, severe rainfall deficits have resulted in a 42% drop in the maize production from 2000. As a result, an estimated 3 million Zambians face hunger. 4 million Angolans—one third of the population—have been forced to flee their homes. More than 11 million people in Ethiopia need immediate food assistance.

Participants were then given the opportunity to donate a portion of the $5 they just earned to a charity that provided food assistance. Before reading on, ask yourself, “If I were in a participant’s shoes, how much would I give, if anything?”

The second group of participants, in what was called the identifiable condition, was presented with information about Rokia, a desperately poor seven-year-old girl from Mali who faced starvation. These participants looked at her picture and read the following statement (which sounds as if it came straight from a direct-mail appeal):

> Her life would be changed for the better as a result of your financial gift. With your support, and the support of other caring sponsors, Save the Children will work with Rokia’s family and other members of the community to help feed her, provide her with an education, as

well as basic medical care and hygiene education.

As was the case in the statistical condition, participants in the identifiable condition were given the opportunity to donate some or all of the $5 they had just earned. Again, ask yourself how much you might donate in response to the story of Rokia. Would you give more of your money to help Rokia or to the more general fight against hunger in Africa?

If you were anything like the participants in the experiment, you would have given twice as much to Rokia as you would to fight hunger in general (in the statistical condition, the average donation was 23 percent of participants' earnings; in the identifiable condition, the average was more than double that amount, 48 percent). This is the essence of what social scientists call "the identifiable victim effect": once we have a face, a picture, and details about a person, we feel for them, and our actions—and money—follow. However, when the information is not individualized, we simply don't feel as much empathy and, as a consequence, fail to act.

The identifiable victim effect has not escaped the notice of many charities, including Save the Children, March of Dimes, Children International, the Humane Society, and hundreds of others. They know that the key to our wallets is to arouse our empathy and that examples of individual suffering are one of the best ways to ignite our emotions (individual examples ⇨ emotions ⇨ wallets).

In my opinion, the American Cancer Society (ACS) does a tremendous job of implementing the underlying psychology of the identifiable victim effect. The ACS understands not only the importance of emotions but also how to mobilize them. How does the ACS do it? For one thing, the word "cancer" itself creates a more powerful emotional imagery than a more scientifically informative name such as "transformed cell abnormality." The ACS also makes powerful use of another rhetorical tool by dubbing everyone who has ever had cancer a "survivor" regardless of the severity of the case (and even if it's more likely that a person would die of old age long before his or her cancer could take its toll). An emotionally loaded word such as "survivor" lends an additional charge to the cause. We don't use that word in connection with, say, asthma or osteoporosis. If the National Kidney Foundation, for example, started calling anyone who had suffered from kidney failure a "renal failure survivor," wouldn't we give more money to fight this very dangerous condition?

On top of that, conferring the title "survivor" on anyone who has had cancer makes it possible for the ACS to create a broad and highly sympathetic network of people who have a deep personal interest in the cause and can create more personal connections to others who don't have the disease. Through the ACS's many sponsorship-based marathons and charity events, people who would otherwise not be directly connected to the cause end up donating money—not necessarily because they are interested in cancer research and prevention but because they know a cancer survivor. Their concern for that one person motivates them to give their time and money to the ACS.

Closeness, Vividness, and the "Drop-in-the-Bucket" Effect

The experiment and anecdotes I just described demonstrate that we are willing to spend money, time, and effort to help identifiable victims yet fail to act when confronted with statistical victims (say, hundreds of thousands of Rwandans). But what are the reasons for this pattern of behavior? As is the case for many complex social problems, here too there are multiple psychological forces in play. But before we discuss these in more detail, try the following thought experiment:*

Imagine that you are in Cambridge, Massachusetts, interviewing for your dream job. You have an hour before your interview, so you decide to walk to your appointment from your hotel in order to see some of the city and clear your head. As you walk across a bridge over the Charles River, you hear a cry below you. A few feet up the river, you see a little girl who seems to be drowning—she's calling for help and gasping for air. You are wearing a brand-new suit and snappy accoutrements, all of which has cost you quite a bit of money—say, $1,000. You're a good swimmer, but you have no time to remove anything if you want to save her. What do you do? Chances are you wouldn't think much; you'd simply jump in to save her, destroying your new suit and missing your job interview. Your decision to jump in is certainly a reflection of the fact that you are a kind and wonderful human being, but it might also be due partially to three psychological factors.*

First, there's your proximity to the victim—a factor psychologists refer to as closeness. Closeness doesn't just refer to physical nearness, however; it also refers to a feeling of kinship—you are close to your relatives, your social group, and to people with whom you share similarities. Naturally (and thankfully), most of the tragedies in the world are not close to us in terms of physical or psychological proximity. We don't personally know the vast majority of the people who are suffering, and therefore it is hard for us to feel as much empathy for their pain as we might for a relative, friend, or neighbor in trouble. The effect of closeness is so powerful that we are much more likely to give money to help a neighbor who has lost his high-paying job than to a much needier homeless person who lives one town over. And we will be even less likely to give money to help someone whose home has been lost to an earthquake three thousand miles away.

The second factor is what we call vividness. If I tell you that I've cut myself, you don't get the full picture and you don't feel much of my pain. But if I describe the cut in detail with tears in my voice and tell you how deep the wound is, how much the torn skin hurts me, and how much blood I'm losing, you get a more vivid picture and will empathize with me much more. Likewise, when you can see a drowning victim and hear her cries as she struggles in the cold water, you feel an immediate need to act.

The opposite of vividness is vagueness. If you are told that someone is drowning but you don't see that person or hear their cry, your emotional machinery is not engaged. Vagueness is a bit like looking at a picture of Earth taken from space; you can see the shape of the continents, the blue of the oceans, and the large mountain ridges, but you don't see the details of traffic jams, pollution, crime, and wars. From far away, everything looks peaceful and lovely; we don't feel the need to change anything.

The third factor is what psychologists call the drop-in-the-bucket effect, and it has to do with your faith in your ability to single-handedly and completely help

the victims of a tragedy. Think about a developing country where many people die from contaminated water. The most each of us can do is go there ourselves and help build a clean well or sewage system. But even that intense level of personal involvement will save only a few people, leaving millions of others still in desperate need. In the face of such large needs, and given the small part of it that we can personally solve, one may be tempted to shut down emotionally and say, "What's the point?"*

To think about how these factors might influence your own behavior, ask yourself the following questions: What if the drowning girl lived in a faraway land hit by a tsunami and you could, at a very moderate expense (much less than the $1,000 that your suit cost you), help save her from her fate? Would you be just as likely to "jump in" with your dollars? Or what if the situation involved a less vivid and immediate danger to her life? For example, let's say she was in danger of contracting malaria. Would your impulse to help her be just as strong? Or what if there were many, many children like her in danger of developing diarrhea or HIV/AIDS (and there are)? Would you feel discouraged by your inability to completely solve the problem? What would happen to your motivation to help?

If I were a betting man, I would wager that your desire to act to save many kids who are slowly contracting a disease in a faraway land is not that high compared with the urge to help a relative, friend, or neighbor who is dying of cancer. (Lest you feel that I'm picking on you, you should know that I behave exactly the same way.) It is not that you are hard-hearted, it is just that you are human—and when a tragedy is faraway, large, and involves many people, we take it in from a more distant, less emotional, perspective. When we can't see the small details, suffering is less vivid, less emotional, and we feel less compelled to act.

If you stop to think about it, millions of people around the world are essentially drowning every day from starvation, war, and disease. And despite the fact that we could achieve a lot at a relatively small cost, thanks to a combination of closeness, vividness, and the drop-in-the-bucket effect, most of us don't do much to help.

Thomas Schelling, the Nobel laureate in economics, did a good job describing the distinction between an individual life and a statistical life when he wrote:

> Let a 6-year-old girl with brown hair need thousands of dollars for an operation that will prolong her life until Christmas, and the post office will be swamped with nickels and dimes to save her. But let it be reported that without a sales tax the hospital facilities of Massachusetts will deteriorate and cause a barely perceptible increase in preventable deaths—not many will drop a tear or reach for their checkbooks.[17]

How Rational Thought Blocks Empathy

All this appeal to emotion raises the question: what if we could make people more rational, like *Star Trek*'s Mr. Spock? Spock, after all, was the ultimate realist: being

both rational and wise, he would realize that it's most sensible to help the greatest number of people and take actions that are proportional to the real magnitude of the problem. Would a colder view of problems prompt us to give more money to fight hunger on a larger scale than helping little Rokia?

To test what would happen if people thought in a more rational and calculated manner, Deb, George, and Paul designed another interesting experiment. At the start of this experiment, they asked some of the participants to answer the following question: "If a company bought 15 computers at $1,200 each, then, by your calculation, how much did the company pay in total?" This was not a complex mathematical question; its goal was to prime (the general term psychologists use for putting people in a particular, temporary state of mind) the participants so that they would think in a more calculating way. The other participants were asked a question that would prime their emotions: "When you hear the name George W. Bush, what do you feel? Please use one word to describe your predominant feeling."

After answering these initial questions, the participants were given the information either about Rokia as an individual (the identifiable condition) or about the general problem of food shortage in Africa (the statistical condition). Then they were asked how much money they would donate to the given cause. The results showed that those who were primed to feel emotion gave much more money to Rokia as an individual than to help fight the more general food shortage problem (just as in the experiment without any priming). The similarity of the results when participants were primed with emotions and when they were not primed at all suggests that even without emotional priming, participants relied on their feelings of compassion when making their donation decisions (that is why adding an emotional prime did not change anything—it was already part of the decision process).

And what about the participants who were primed to be in a calculating, Spock-like state of mind? You might expect that more calculated thinking would cause them to "fix" the emotional bias toward Rokia and so to give more to help a larger number of people. Unfortunately, those who thought in a more calculated way became equal-opportunity misers by giving a similarly small amount to both causes. In other words, getting people to think more like Mr. Spock reduced all appeal to compassion and, as a consequence, made the participants less inclined to donate either to Rokia or to the food problem in general. (From a rational point of view, of course, this makes perfect sense. After all, a truly rational person would generally not spend any money on anything or anyone that would not produce a tangible return on investment.)

I FOUND THESE results very depressing, but there was more. The original experiment that Deb, George, and Paul carried out on the identifiable victim effect—the one in which participants gave twice as much money to help Rokia as to fight hunger in general—had a third condition. In this condition, participants received both the individual information about Rokia and the statistical information about the food problem simultaneously (without any priming).

Now try to guess the amount that participants donated. How much do you think they gave when they learned about both Rokia and the more general food shortage problem at the same time? Would they give the same high amount as when they

learned only about Rokia? Or would they offer the same low amount as when the problem was presented in a statistical way? Somewhere in the middle? Given the depressing tone of this chapter, you can probably guess the pattern of results. In this mixed condition, the participants gave 29 percent of their earnings—slightly higher than the 23 percent that the participants in the statistical condition gave but much lower than the 48 percent donated in the individualized condition. Simply put, it turned out to be extremely difficult for participants to think about calculation, statistical information, and numbers and to feel emotion at the same time.

Taken together, these results tell a sad story. When we're led to care about individuals, we take action, but when many people are involved, we don't. A cold calculation does not increase our concern for large problems; instead, it suppresses our compassion. So, while more rational thinking sounds like good advice for improving our decisions, thinking more like Mr. Spock can make us less altruistic and caring. As Albert Szent-Györgi, the famous physician and researcher, put it, "I am deeply moved if I see one man suffering and would risk my life for him. Then I talk impersonally about the possible pulverization of our big cities, with a hundred million dead. I am unable to multiply one man's suffering by a hundred million."[18]

Where Should the Money Go?

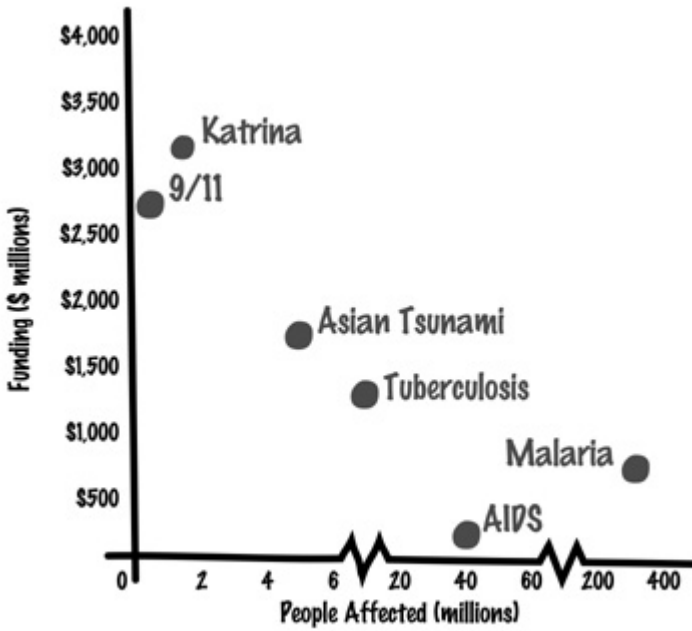
These experiments might make it seem that the best course of action is to think less and use only our feelings as a guide when making decisions about helping others. Unfortunately, life is not that simple. Though we sometimes don't step in to help when we should, at other times we act on behalf of the suffering when it's irrational (or at least inappropriate) to do so.

For example, a few years ago a two-year-old white terrier named Forgea spent three weeks alone aboard a tanker drifting in the Pacific after its crew abandoned ship. I'm sure Forgea was adorable and didn't deserve to die, but one can ask whether, in the grand scheme of things, saving her was worth a twenty-five-day rescue mission that cost $48,000 of taxpayers' money—an amount that might have been better spent caring for desperately needy humans. In a similar vein, consider the disastrous oil spill from the wrecked *Exxon Valdez*. The estimates for cleaning and rehabilitating a single bird were about $32,000 and for each otter about $80,000.[19] Of course, it's very hard to see a suffering dog, bird, or otter. But does it really make sense to spend so much money on an animal when doing so takes away resources from other things such as immunization, education, and health care? Just because we care more about vivid examples of misery doesn't mean that this tendency always helps us to make better decisions—even when we want to help.

Think again about the American Cancer Society. I have nothing against the good work of the ACS, and if it were a business, I would congratulate it on its resourcefulness, its understanding of human nature, and its success. But in the nonprofit world, there is some bitterness against the ACS for having been "overly successful" in capturing the enthusiastic support of the public and leaving other equally important causes wanting. (The ACS is so successful that there are several organized efforts to ban donations to what is called "the world's wealthiest nonprofit."[20]) In a way, if people who give to the ACS don't give as much to other

non-cancer charities, the other causes become victims of the ACS's success.

Mismatching money and need: The number of people (in millions) affected by different tragedies and the amount of money (in millions of dollars) directed toward these tragedies



To think about the problem of misallocation of resources in more general terms, consider the graph on the previous page.[21] It depicts the amount of money donated to help victims across a variety of catastrophes (Hurricane Katrina, the terrorist attacks of September 11, 2001, the tsunami in Asia, tuberculosis, AIDS, and malaria) and the number of people these tragedies affected directly.

The graph clearly shows that in these cases, as the number of sufferers increased, the amount of money donated decreased. We can also see that more money went to U.S.-based tragedies (Hurricane Katrina and the terrorist attacks of 9/11) than to non-U.S. ones, such as the tsunami. Perhaps more disturbingly, we also see that prevention of diseases such as tuberculosis, AIDS, and malaria received very little funding relative to the magnitude of those problems. That is probably because prevention is directed at saving people who are not yet sick. Saving hypothetical people from potential future disease is too abstract and distant a goal for our emotions to take hold and motivate us to open our wallets.

Consider another large problem: CO_2 emissions and global warming. Regardless of your personal beliefs on this matter, this type of problem is the toughest kind to

get people to care about. In fact, if we tried to manufacture an exemplary problem that would inspire general indifference, it would probably be this. First of all, the effects of climate change are not yet close to those living in the Western world: rising sea levels and pollution may affect people in Bangladesh, but not yet those living in the heartland of America or Europe. Second, the problem is not vivid or even observable—we generally cannot see the CO_2 emissions around us or feel that the temperature is changing (except, perhaps, for those coughing in L.A. smog). Third, the relatively slow, undramatic changes wrought by global warming make it hard for us to see or feel the problem. Fourth, any negative outcome from climate change is not going to be immediate; it will arrive at most people's doorsteps in the very distant future (or, as climate-change skeptics think, never). All of these reasons are why Al Gore's *An Inconvenient Truth* relied so heavily on images of drowning polar bears and other vivid imagery; they were his way of tapping into our emotions.

Of course, global warming is the poster child for the drop-in-the-bucket effect. We can cut back on driving and change all our lightbulbs to highly efficient ones, but any action taken by any one of us is far too small to have a meaningful influence on the problem—even if we realize that a great number of people making small changes can have a substantial effect. With all these psychological forces working against our tendency to act, is it any surprise that there are so many huge and growing problems around us—problems that, by their very nature, do not evoke our emotion or motivation?

How Can We Solve the Statistical Victim Problem?

When I ask my students what they think will inspire people to get out of their chairs, take some action, donate, and protest, they tend to answer that "lots of information" about the magnitude and severity of the situation is most likely the best way to inspire action. But the experiments described above show that this isn't the case. Sadly, our intuitions about the forces that motivate human behavior seem to be flawed. If we were to follow my students' advice and describe tragedies as large problems affecting many people, action would most likely not happen. In fact, we might achieve the opposite and suppress a compassionate response.

This raises an important question: if we are called to action only by individual, personalized suffering and are numbed when a crisis outgrows our ability to imagine it, what hope do we have of getting ourselves (or our politicians) to solve large-scale humanitarian problems? Clearly, we cannot simply trust that we will all do the right thing when the next disaster inevitably takes place.

It would be nice (and I realize that that the word "nice" here isn't really appropriate) if the next catastrophe were immediately accompanied by graphic photos of individuals suffering—maybe a dying kid that can be saved or a drowning polar bear. If such images were available, they would incite our emotions and propel us into action. But all too often, images of disaster are too slow to appear (as was the case in Rwanda) or they depict a large statistical rather than identifiable suffering (think, for example, about Darfur). And when these emotion-evoking images finally appear on the public stage, action may be too late in coming. Given all our human barriers to solving the significant problems we face, how can we shake off our feelings of despair, helplessness, and apathy in the

face of great misery?

One approach is to follow the advice given to addicts: that the first step in overcoming any addiction is recognizing the problem. If we realize that the sheer size of a crisis causes us to care less rather than more, we can try to change the way we think and approach human problems. For example, the next time a huge earthquake flattens a city and you hear about thousands of people killed, try to think specifically about helping one suffering person—a little girl who dreams of becoming a doctor, a graceful teenage boy with a big smile and a talent for soccer, or a hardworking grandmother struggling to raise her deceased daughter's child. Once we imagine the problem this way, our emotions are activated, and then we can decide what steps to take. (This is one reason why Anne Frank's diary is so moving—it's a portrayal of a single life lost among millions.) Similarly, you can also try to counteract the drop-in-the-bucket effect by reframing the magnitude of the crisis in your mind. Instead of thinking about the problem of massive poverty, for example, think about feeding five people.

We can also try to change our ways of thinking, taking the approach that has made the American Cancer Society so successful in fund-raising. Our emotional biases that favor nearby, singular, vivid events can stir us to action in a broader sense. Take the psychological feeling of closeness, for example. If someone in our family develops cancer or multiple sclerosis, we may be inspired to raise money for research on that particular disease. Even an admired person who is personally unknown to us can inspire a feeling of closeness. For example, since being diagnosed with Parkinson's disease in 1991, Michael J. Fox has lobbied for research funding and worked to educate the public about the disease. People who loved *Family Ties* and *Back to the Future* associate his face with his cause, and they come to care about it. When Michael J. Fox asks donors to support his foundation, it can sound a little self-serving—but actually it's quite effective in raising money to help Parkinson's sufferers.

Another approach is to come up with rules to guide our behavior. If we can't trust our hearts to always drive us to do the right thing, we might benefit from creating rules that will direct us to take the right course of action, even when our emotions are not aroused. For example, in the Jewish tradition there is a "rule" that is designed to fight the drop-in-the-bucket effect. According to the Talmud, "whoever saves a life, it is considered as if he saved an entire world."[22] With such a guideline at hand, religious Jews might be able to overcome the natural tendency not to act when all we can do is solve a small part of the problem. On top of that, the way the rule is defined ("as if he saved an entire world") makes it easier to imagine that, by saving even just one person, we can actually do something complete and enormous.

The same approach of creating clear moral principles can work in cases where clear humanitarian principles apply. Consider again what happened in the Rwanda massacre. The United Nations was too slow to react and stop it, even when doing so might not have required a large intervention. (The UN general in the region, Roméo Dallaire, did in fact, ask for 5,000 troops in order to stop the impending slaughter, but his request was denied.) Year after year, we hear about massacres

and genocides around the globe, and often help comes too late. But imagine that the United Nations were to enact a law stating that every time the lives of a certain number of people were in danger (in the judgment of a leader close to the situation, such as General Dallaire), it would immediately send an observing force to the area and call a meeting of the Security Council with a requirement that a decision about next steps be taken within forty-eight hours.* Through such a commitment to rapid action, many lives could be saved.

This is also how governments and not-for-profit organizations should look at their mission. It is politically easier for such organizations to help causes that the general population is interested in, but those causes often already receive some funding. It is causes that are not personally, socially, or politically appealing that usually don't receive the investments they deserve. Preventative health care is perhaps the best example of this. Saving people who are not yet sick, or who aren't even born, isn't as inspiring as saving a single polar bear or orphaned child, because future suffering is intangible. By stepping in where our emotions don't compel us to act, governments and NGOs can make a real difference in fixing the helping imbalance and hopefully reduce or eliminate some of our problems.

In many ways, it is very sad that the only effective way to get people to respond to suffering is through an emotional appeal, rather than through an objective reading of massive need. The upside is that when our emotions are awakened, we can be tremendously caring. Once we attach an individual face to suffering, we're much more willing to help, and we go far beyond what economists would expect from rational, selfish, maximizing agents. Given this mixed blessing, we should realize that we are simply not designed to care about events that are large in magnitude, take place far away, or involve many people we don't know. By understanding that our emotions are fickle and how our compassion biases work, perhaps we can start making more reasonable decisions and help not only those who are trapped in a well.

Chapter 10
The Long-Term Effects of Short-Term Emotions

Why We Shouldn't Act on Our Negative Feelings

For better or worse, emotions are fleeting. A traffic jam may annoy, a gift may please, and a stubbed toe will send us into a bout of cursing, but we don't stay annoyed, happy, or upset for very long. However, if we react impulsively in response to what we're feeling, we can live to regret our behavior for a long time. If we send a furious e-mail to the boss, say something awful to someone we love, or buy something we know we can't afford, we may regret what we've done as soon as the impulse wears off. (This is why common wisdom tells us to "sleep on it," "count to ten," and "wait till you've cooled off" before making a decision.) When an emotion—especially anger—gets the best of us, we "wake up," smack our foreheads, and ask ourselves, "What was I thinking?" In that moment of clarity, reflection, and regret, we often try to comfort ourselves with the idea that at least we won't do *that* again.

But can we truly steer clear of repeating the actions we took in the heat of the moment?

Here's a story of a time when I lost my own temper. During my second year as a lowly assistant professor at MIT, I taught a graduate class on decision making. The course was part of the Systems Designs and Management Program, which was a joint degree between the Sloan School of Management and the School of Engineering. The students were curious (in many ways), and I enjoyed teaching them. But one day, about halfway through the semester, seven of them came to talk to me about a schedule conflict.

The students happened to be taking a class in finance. The professor—I'll call him Paul—had canceled several of his regular class meetings and, to compensate, had scheduled a few makeup sessions. Unfortunately, the sessions happened to overlap with the last half of my three-hour class. The students told me that they had politely informed Paul about the conflict but that he had dismissively told them to get their priorities in order. After all, he reportedly said, a course in finance was clearly more important than some esoteric course on the psychology of decision making.

I was annoyed, of course. I had never met Paul, but I knew he was a very distinguished professor and a former dean at the school. Since I ranked very low on the academic totem pole, I didn't have a lot of leverage and didn't know what to do. Wanting to be as helpful to my students as possible, I decided that they could leave my class after the first hour and a half in order to make it to the finance class and that I would teach them the part they had missed on the

following morning.

The first week, the seven students got up and left the room halfway through my class, as we had discussed. We met the next day in my office and went over the material. I wasn't happy about the disruption or the extra work, but I knew it was not the students' fault; I also knew that this was a finite arrangement. During the third week, after the group left to attend the finance class's makeup session, I gave my class a short break. I remember feeling irritated by the disruption as I was walking toward the bathroom. At that moment, I saw my conscripted students through an open door. I peeped into the class and saw the finance professor, who was in the middle of making some point with his hand poised demonstratively in the air.

Suddenly, I felt spectacularly annoyed. This inconsiderate guy had disrespected my time and that of my students and, thanks to his obvious disregard, I had to spend extra time running my own makeup sessions for classes I didn't even cancel.

What did I do? Well, compelled by my indignation, I walked right up to him in front of all the students and said, "Paul, I'm very upset that you scheduled your makeup session on top of my class."

He looked baffled. He clearly did not know who I was or what I was talking about.

"I'm in the middle of a lecture," he said huffily.

"I know," I retorted. "But I want you to realize that scheduling your makeup sessions on top of my class time was not the right thing to do."

I paused. He still seemed to be trying to figure out who I was.

"That's all I wanted to say," I continued. "And now that I've told you how I feel about it, we can just put it behind us and not mention it again." With that gracious conclusion, I turned around and left the room.

As soon as I left his class, I realized that I'd done something I probably shouldn't have, but I felt much better.

That night I got a call from Dražen Prelec, a senior faculty member in my department and one of the main reasons I joined MIT. Dražen told me that the dean of the school, Dick Schmalensee, had called him to tell him about the episode. The dean asked whether there was any chance that I would apologize publicly in front of the whole school. "I told him it was not very likely," Dražen told me, "but you should expect a call from the dean." Suddenly, memories of being summoned to the school principal's office when I was a kid came flooding back.

Sure enough, I got a call from Dick the next day and had a meeting with him soon afterward. "Paul is furious," the dean told me. "He feels violated by having someone else walk into his class and confront him in front of all the students. He wants you to apologize."

After telling the dean my side of the story, I conceded that I probably shouldn't have walked into Paul's class in anger and reprimanded him. At the same time, I suggested that Paul should apologize to me as well, since in spirit he had interrupted my class three times. Soon it became clear to the dean that I was not going to say "I'm sorry."

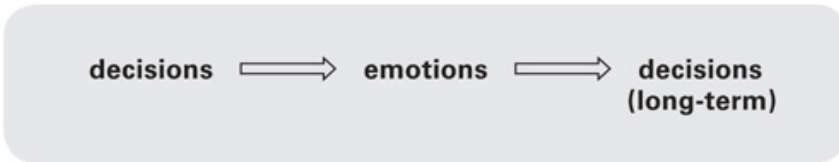
I even tried to point out to him the benefit of this situation. "Look," I told the dean, "you're an economist. You know the importance of reputation. I now have a reputation for fighting back when someone steps on my toes, so most likely no one

will do this to me again. That means you won't have to deal with this type of situation in the future, and that's a good thing, right?" The expression on his face didn't reveal any appreciation for my strategic thinking. Instead, he just asked me to talk to Paul. (The chat with Paul was similarly dissatisfying on both sides, except that he indicated that I might have some kind of social disability and suggested that I needed help understanding the rules of etiquette.)

My first point in telling this tale of academic obstinacy is to admit that I, too, can behave inappropriately in the heat of the moment (and believe it or not, I have more extreme examples of this). More important, the story illustrates an important aspect of how emotions work. Of course, I could have called Paul when the scheduling conflict first became an issue and spoken to him about it, but I didn't. Why? Partly because I didn't know what to do in this situation, but also because I didn't care that much. Aside from the time when the students left my class and when they arrived in my office the following morning for a makeup session, I was fully engrossed in my work, and I didn't even remember Paul or think about our scheduling conflicts. But when I saw my students leave the class, I remembered I'd have to teach an extra class the next day; then, when I saw them in Paul's class, it all converged into a perfect storm. I became emotional and did something I shouldn't have. (I should also confess that I am often too stubborn to apologize.)

Emotions and DECISIONS

In general, emotions seem to disappear without a trace. For example, let's say that someone cuts you off in traffic on the way to work. You feel angry, but you take a deep breath and do nothing. Soon enough, your thoughts return to the road, the song on the radio, and the restaurant you might go to later that evening. In such cases, you have your own general approach to making decisions ("decisions" in the diagram below), and your momentary anger has no effect on your similar decisions going forward. (The small-d "decisions" on both sides of the emotions in the diagram below signify the transience of the emotions and the stability of your decision-making strategies.)



But Eduardo Andrade (a professor at the University of California at Berkeley) and I wondered whether the effects of emotions could still affect decisions we make far into the future, long after the original feelings associated with the stubbed toe, the rude driver, the unfair professor, or other annoyances have worn off.

Our basic logic was this: Imagine that something happens that makes you feel happy and generous—say, your favorite team wins the World Series. That night you are having dinner at your mother-in-law's, and, while in this great mood, you impulsively decide to buy her flowers. A month later, the emotions of the big win have faded away, and so has the cash in your wallet. It is time for another visit to

your mother-in-law. You think about how a good son-in-law should act. You consult your memory, and you remember your wonderful flower-buying act from your last visit, so you repeat it. You then repeat the ritual over and over until it becomes a habit (and in general this is not a bad habit to fall into). Even though the underlying reason for your initial action (excitement over the game) is no longer present, you take your past actions as an indication of what you should do next and the kind of son-in-law you are (the kind who buys his mother-in-law flowers). That way, the effects of the initial emotion end up influencing a long string of your decisions.

Why does this happen? Just as we take cues from others in figuring out what to eat or wear, we also look at ourselves in the rearview mirror. After all, if we are likely to follow other people we don't know that well (a behavior we call herding), how much more likely are we to follow someone we hold in great esteem—ourselves? If we see ourselves having once made a certain decision, we immediately assume that it must have been reasonable (how could it have been otherwise?), so we repeat it. We call this type of process self-herding, because it is similar to the way we follow others but instead we follow our own past behavior.*

NOW LET'S SEE how decisions engulfed by emotions could become the input for self-herding. Imagine that you work for a consulting company and, among your other responsibilities, you also run the weekly staff meeting. Every Monday morning, you ask each project leader to describe their progress from the previous week, goals for the next week, and so on. As each team updates the group, you look for synergies among the different teams. But since the weekly staff meeting is also the only occasion for everyone to get together, it often becomes a place for socialization and humor (or whatever passes for humor among consultants).

On one particular Monday morning, you arrive at the office an hour early, so you start going through a large pile of mail that has been waiting for you. Upon opening one of the letters, you discover that the deadline has passed for registering your kids for ceramics class. You are upset with yourself, and, even worse, you realize that your wife will blame you for your forgetfulness (and that she will bring it up in many future arguments). All of this sours your mood.

A few minutes later, still highly annoyed, you walk into the staff meeting to find everyone chatting happily about nothing in particular. Under normal circumstances you wouldn't mind. In fact, you think that some chitchat is good for office morale. But today is not a normal day. Under the influence of your bad mood, you make a DECISION. (I've capitalized "DECISION" to signify the emotional component.) Instead of opening the meeting with a few pleasantries, you open the meeting by saying sullenly, "I want to talk about the importance of becoming more efficient and not wasting time. Time is money." The smiles disappear as you lecture everyone for a minute about the importance of efficiency. Then the meeting moves on to other matters.

When you arrive home that night, you find that your wife is actually very understanding. She doesn't blame you. The kids have too many extracurricular activities anyway. And all your original worry has dissipated.

But unbeknown to you, your DECISION to stop wasting time in meetings has set a precedent for your future behavior. Since you (like all of us) are a self-herding kind of animal, you look to your past behaviors as a guide. So at the start of

subsequent staff meetings, you stop the chitchat, dispense with the pleasantries, and get right down to brass tacks. The original emotion in response to the slipped deadline has long passed, but your DECISION continues to influence the tone and atmosphere of your meetings as well as your behavior as a manager for a long time.

IN AN IDEAL world, you should be able to remember the emotional state under which you DECIDED to act like a schmuck, and you would realize that you don't need to continue to behave that way. But the reality is that we humans have a very poor memory of our past emotional states (can you remember how you felt last Wednesday at 3:30 P.M.?), but we *do* remember the actions we've taken. And so we keep on making the same decisions (even when they are DECISIONS). In essence, once we choose to act on our emotions, we make short-term DECISIONS that can change our long-term ones:



Eduardo and I called this idea the emotional cascade. I don't know about you, but I find the notion that our DECISIONS can remain hostage to emotions long after the emotions have passed rather frightening. It is one thing to realize how many ill-considered decisions we have made based on our mood—choices that, in perfectly neutral, "rational" moments, we would never make. It is another matter altogether to realize that these emotional influences can continue to affect us for a long, long time.

The Ultimatum Game

To test our emotional-cascade idea, Eduardo and I had to do three key things. First, we had to either irritate people or make them happy. This temporary emotional baggage would set the stage for the second part of our experiment, in which we would get our participants to make a decision while under the influence of that emotion. Then we would wait until their feelings subsided, get them to make some more decisions, and measure whether the earlier emotions had any long-lasting influence on their later choices.

We got our participants to make decisions as part of an experimental setup that economists call the ultimatum game. In this game there are two players, the sender and the receiver. In most setups, the two players sit separately, and their identities are hidden from each other. The game starts when the experimenter gives the sender some money—say, $20. The sender then decides how to split this amount between himself and the receiver. Any split is allowed: the sender can offer an equal split of $10:$10 or keep more money for himself with a split of $12:$8. If he's feeling especially generous, he might want to give more money to the receiver in a split of $8:$12. If he's feeling selfish, he can offer an extremely uneven split of $18:$2 or even $19:$1. Once the sender announces the proposed split, the receiver

can either accept or reject the offer. If the receiver accepts it, each player gets to keep the amount specified; but if the receiver rejects the offer, all the money goes back to the experimenter, and both players get nothing.

Before I describe our particular version of the ultimatum game, let's stop for a second and think about what might happen if both players made perfectly rational decisions. Imagine that the experimenter has given the sender $20 and that you are the receiver. For the sake of argument, let's say that the sender offers you a $19:$1 split, so he gets $19 and you get $1. Since you are a perfectly rational being, you might well think to yourself, "What the heck? A buck is a buck, and since I don't know who the other person is and I am unlikely to meet him again, why should I cut off my nose to spite my face? I'll accept the offer and at least wind up $1 richer." That is what you should do according to the principles of rational economics—accept any offer that increases your wealth.

Of course, many studies in behavioral economics have shown that people make decisions based on a sense of fairness and justice. People get angry over unfairness, and, as a consequence, they prefer to lose some money in order to punish the person making the unfair offer (see chapter 5, "The Case for Revenge"). Following these findings, brain-imaging research has shown that receiving unfair offers in the ultimatum game is associated with activation in the anterior insula—a part of the brain associated with negative emotional experience. Not only that, but the individuals who had stronger anterior insula activity (stronger emotional reaction) were also more likely to reject the unfair offers.[23]

Because our reaction to unfair offers is so basic and predictable, in the real world of irrational decisions, senders can anticipate more or less how recipients might feel about such offers (for example, consider how you would expect me to react if you gave me an offer of $95:$5). After all, we've all had experiences with unfair offers in the past, and we can imagine that we would feel insulted and say "Forget it, you #$%*&$#!" if someone were to suggest a $19:$1 split. This understanding of how unfair offers make people feel and behave is why most people in the ultimatum game offer splits that are closer to $12:$8 and why those splits are almost always accepted.

I should note that there is one interesting exception to this general rule of caring about fairness. Economists and students taking economics classes are trained to expect people to behave rationally and selfishly. So when they play the ultimatum game, economic senders think that the right thing to do is to propose a $19:$1 split, and—since they are trained to think that acting rationally is the right thing to do—the economic recipients accept the offer. But when economists play with noneconomists, they're deeply disappointed when their uneven offers are rejected. Given these differences, I suspect that you can decide for yourself what kinds of games you want to play with fully rational economists and which ones you would rather play with irrational human beings.

In our particular game, the starting amount was $10. About two hundred participants were told that the sender was just another participant, but, in reality, the uneven splits of $7.50:$2.50 came from Eduardo and me (we did this because we wanted to ensure that all the offers were the same and that they were all unfair). Now, if an anonymous person offered you such a deal, would you take it? Or would you give up $2.50 in order to make him lose $7.50? Before you answer,

consider how your response might change if I preloaded your thoughts with some incidental emotions, as psychologists call them.

Let's say you are in the group of participants in the anger condition. You begin the experiment by watching a clip from a movie called *Life as a House*. In the clip, the architect, played by Kevin Kline, is fired by his jerk of a boss after twenty years on the job. Royally pissed off, he grabs a baseball bat and destroys the lovely miniature architectural models of the houses he's made for the company. You can't help but feel for the guy.

After the clip is over, the experimenter asks you to write down a personal experience that is similar to the clip you just watched. You might remember the time when, as a teenager, you worked at a convenience store and the boss unfairly accused you of pilfering money from the till; or the time someone else in the office took credit for a project that you had done. Once you've finished your write-up (and the intended gnashing of teeth that the unpleasant memory has aroused), you move to the next room, where a graduate student explains the rules of the ultimatum game. You take a seat and wait to receive your offer from the unknown sender. When you get the $7.50:$2.50 offer a few minutes later, you have to make a choice: do you accept the $2.50 or reject it and get paid nothing? And what about the satisfaction of having avenged yourself on that greedy player at the other end?

Alternatively, imagine that you are in the happy condition. Those participants were somewhat more fortunate, since they started out by watching a clip from the TV sitcom *Friends*. In this five-minute clip, the whole *Friends* gang makes New Year's resolutions that are comically impossible for them to keep. (For instance, Chandler Bing resolves not to make fun of his friends and is immediately tempted to break his resolution when he learns that Ross is dating a woman named Elizabeth Hornswaggle.) Again, after watching the clip, you write down a similar personal experience, which isn't a problem since you too have friends who try to commit to impossible and amusing resolutions every New Year's. Then you go into another room, hear the instructions for the game, and in a minute or two, your offer appears: "Receiver gets $2.50, sender gets $7.50." Would you take it or not?

How did the participants in each of these conditions react to our offer? As you might suspect, many rejected the unfair offers, though they sacrificed some of their own winnings in the process. But more apropos to the goal of our experiment, we found that the people who felt irritated by the *Life as a House* clip were much more likely to reject the unfair offers than those who watched *Friends*.

If you think about the influence of emotions in general, it makes perfect sense that we might retaliate against someone who deals unfairly with us. But our experiment showed that the retaliatory response didn't spring just from the unfairness of the offer; it also had something to do with the leftover emotions that arose while the participants watched the clips and wrote about their own experiences. The response to the films was a different experience altogether that should have had nothing to do with the ultimatum game. Nevertheless, the irrelevant emotions did matter as they spilled over into participants' decisions in the game.

Presumably, the participants in the angry condition misattributed their negative emotions. They probably thought something like "I'm feeling really annoyed right

now, and it must be because of this lousy offer, so I'm going to reject it." In the same way, the participants in the happy condition misattributed their positive emotions and may have thought something like "I'm feeling pretty happy right now, and it must be because of this offer of free money, so I'm going to accept it." And so the members of each group followed their (irrelevant) emotions and made their decisions.

OUR EXPERIMENTS SHOWED that emotions influence us by turning decisions into DECISIONS (no real news here) and that even irrelevant emotions can create DECISIONS. But Eduardo and I really wanted to test whether emotions continue to exert their influence even after they subside. We wanted to discover whether the DECISIONS our happy and angry participants made "under the influence" would be the basis of a long-term habit. The most important part of our experiments was yet to come.

But we had to wait for it. That is, we waited a while, until the emotions triggered by the video clips had time to dissipate (we checked to make sure that the emotions were gone) before presenting our participants with some more unfair offers. And how did our now calm and emotionless participants respond? Despite the fact that the emotions in response to the clips had long passed, we observed the same pattern of DECISIONS as when the emotions were alive and kicking. Those who were first angered in response to poor Kevin Kline's treatment rejected the offers more frequently, and they kept making the same DECISIONS even when their angry emotions were no longer there. Similarly, those who were amused by the silly situation in the *Friends* clip accepted the offers more frequently while feeling the positive emotions, and they kept making the same DECISIONS even when the positive emotions dissipated. Clearly, our respondents were calling on their memories of playing the game earlier that day (when they were responding in part to their irrelevant emotions) and made the same DECISION, even though they were long removed from the original emotional state.

How We Herd Ourselves

Eduardo and I decided to take our experiment one step further by reversing the roles of the participants so that they would play the role of senders as well. The procedure was basically as follows: First, we showed the participants one of the two video clips, which created the intended emotions. Then we had them play the game in the role of the receivers (in this game they made DECISIONS influenced by the emotions of the clip) and accept or reject an unfair offer. Next came the delay to allow the emotions to dissipate. Finally came the most important part of this experiment: they played another ultimatum game, but this time they acted as senders rather than receivers. As senders they could propose any offer to another participant (the receiver)—who could then accept it, in which case they would each get their proposed share, or reject it, in which case they would both get nothing.

Why reverse the roles in this way? Because we hoped that doing so could teach us something about the way self-herding works its magic on our decisions in the long term.

Let's step back for a moment and think about two basic ways in which self-

herding could operate:

The Specific Version. Self-herding comes from remembering the specific actions we have taken in the past and mindlessly repeating them ("I brought wine the last time I went to dinner at the Arielys', so I'll do that again"). This kind of past-based decision making provides a very simple decision recipe—"do what you did last time"—but it applies only to situations that are exactly the same as ones we've been in before.

The General Version. Another way to think about self-herding involves the way we look to past actions as a general guide for what we should do next and follow the same basic behavior pattern from there. In this version of self-herding, when we act in a certain way, we also remember our past decisions. But this time, instead of just automatically repeating what we did before, we interpret our decision more broadly; it becomes an indication of our general character and preferences, and our actions follow suit ("I gave money to a beggar on the street, so I must be a caring guy; I should start volunteering in the soup kitchen"). In this type of self-herding, we look at our past actions to inform ourselves of who we are more generally, and then we act in compatible ways.

NOW LET'S THINK for a minute about how this role reversal could give us a better understanding about which of the two types of self-herding—the specific or the general one—played a more prominent part in our experiment. Imagine you are a receiver-turned-sender. You might have seen poor Kevin Kline's character being treated like s**t, followed by his bashing of miniature houses with a baseball bat. As a consequence, you ended up rejecting the unfair offer. Alternatively, you might have chuckled in response to the *Friends* clip and accordingly accepted the uneven offer. In either case, time has passed, and you no longer feel the initial anger or happiness that the movie clip evoked. But now you are in your new role as a sender. (The following is a little intricate, so get ready.)

If the specific version of self-herding was the one operating in our earlier experiment, then in this version of the experiment your initial emotions as a receiver would not affect your later decision as a sender. Why? Because, as a sender, you can't simply rely on a decision recipe that tells you to "do what you did last time." After all, you've never been a sender before, so you are looking at the situation with fresh eyes, making a new type of decision.

On the other hand, if the general version of self-herding was operating and you were in the angry condition, you might say to yourself, "When I was on the other end, I was pissed off. I rejected a $7.50:$2.50 split because it was unfair." (In other words, you are mistakenly attributing your motivation to rejecting the offer to its unfairness, rather than to your anger.) "The person I am sending the offer to this time," you might continue, "is probably like me. He is likely to reject such an unfair offer too, so let me give him something that is more fair—something I would have accepted if I had been in his situation."

Alternatively, if you had watched the *Friends* clip, you accordingly accepted the uneven offer (again, misattributing your reaction to the offer and not to the clip). As a sender, you might now think, "I accepted a $7.50:$2.50 split because I felt okay about it. The person I am sending the offer to this time is probably like me,

and he is likely to also accept such an offer, so let me give him the same $7.50: $2.50 split." This would be an example of the general self-herding mechanism: remembering your actions, attributing them to a more general principle, and following the same path. You even assume that your counterpart would act in a similar way.

The results of our experiments weighted in favor of the general version of self-herding. The initial emotions had an effect long after the fact, even when the role was reversed. Senders who first experienced the angry condition offered more even splits to recipients, while those who were in the happy condition extended more unfair offers.

BEYOND THE PARTICULAR effects of emotions on decisions, the results of these experiments suggest that general self-herding most likely plays a large role in our lives. If it were just the specific version of self-herding that was operating, its effect would be limited to the types of decisions we make over and over. But the influence of the general version of self-herding suggests that decisions we make on the basis of a momentary emotion can also influence related choices and decisions in other domains even long after the original DECISION is made. This means that when we face new situations and are about to make decisions that can later be used for self-herding, we should be very careful to make the best possible choices. Our immediate decisions don't just affect what's happening at the moment; they can also affect a long sequence of related decisions far into our future.

Don't Cross Him

We look for gender differences in almost all of our experiments, but we rarely find any.

This is, of course, not to say that there are no gender differences when it comes to how people make decisions. I suspect that for very basic types of decisions (as in most of the decisions that I study), gender does not play a large role. But I do think that as we examine more complex types of decisions, we will start seeing some gender differences.

For example, when we made the situation in our ultimatum game experiment more complex, we stumbled on an interesting difference in the ways men and women react to unfair offers.

Imagine that you are the receiver in the game and you are getting an unfair offer of $16:$4. As in the other games, you can accept the offer and get $4 (while your counterpart gets $16), or you can reject it, in which case both you and the other player get $0. But, in addition to these two options, you can also take one of two other deals:

1. You can take a deal of $3:$3, which means that you both get less than the original offer but the sender loses more. (Since the original split was $16:$4, you would give up $1, but your counterpart would lose $13.) Plus, by taking this $3:$3 deal, you can teach the other person a lesson about fairness.
2. You can take a deal of $0:$3, which means that you get $3 ($1 less than the original offer) but you get to punish the sender with $0—thus demonstrating to

the other person what it feels like to get the bum end of the deal.

What did we find in terms of gender differences? In general, it turned out that the males were about 50 percent more likely to accept the unfair offer than the females in both the angry and happy conditions. Things got even more interesting when we looked at what alternative deals the participants took ($3:$3 or $0:$3). In the happy condition, not much happened: the women had a slightly higher tendency to choose the equal $3:$3 offer, and there was no gender difference in the tendency to select the revengeful $0:$3 offer. But things really heated up for the participants who watched the *Life as a House* clip and then wrote about analogous situations in their lives. In the angry condition, the women went for the equal $3:$3 offer, while the men opted mostly for the revengeful $0:$3 offer.

Together, these results suggest that though women are more likely to reject unfair offers from the get-go, their motives are more positive in nature. By picking the $3:$3 offer over the $0:$3 one, the women were trying to teach their counterpart a lesson about the importance of equality and fairness. Leading by example, they basically told their counterparts, "Doesn't it feel better to get an equal share of the money?" The men, by contrast, selected the $0:$3 offer over the $3:$3 offer—basically telling their counterparts, "F**k you."

Can You Canoe?

What have we learned from all of this? It turns out that emotions easily affect decisions and that this can happen even when the emotions have nothing to do with the decisions themselves. We've also learned that the effects of emotions can outlast the feelings themselves and influence our long-term DECISIONS down the line.

The most practical news is this: if we do nothing while we are feeling an emotion, there is no short- or long-term harm that can come to us. However, if we react to the emotion by making a DECISION, we may not only regret the immediate outcome, but we may also create a long-lasting pattern of DECISIONS that will continue to misguide us for a long time. Finally, we've also learned that our tendency toward self-herding kicks into gear not only when we make the same kinds of DECISIONS but also when we make "neighboring" ones.

Also, keep in mind that the emotional effect of our video clips was fairly mild and arbitrary. Watching a movie about an angry architect doesn't hold a candle to having a real-life fight with a spouse or child, receiving a reprimand from your boss, or getting pulled over for speeding. Accordingly, the daily DECISIONS we make while we're upset or annoyed (or happy) may have an even larger impact on our future DECISIONS.

I THINK ROMANTIC relationships best illustrate the danger of emotional cascades (although the general lessons apply to all relationships). As couples attempt to deal with problems—whether discussing (or yelling about) money, kids, or what to have for dinner, they not only discuss the problems at hand, they also develop a behavioral repertoire. This repertoire then determines the way they will interact with each other over time. When emotions, however irrelevant, inevitably sneak

into these discussions, they can modify our communication patterns—not just in the short term, while we're feeling whatever it is we're feeling, but also in the long term. And as we now know, once such patterns develop, it's very difficult to alter them.

Take, for instance, a woman who's had a bad day in the office and arrives home with a trunkload of negative emotions. The house is a mess, and she and her husband are both hungry. As she enters the door, her husband asks, from his chair by the TV, "Weren't you going to pick up something for dinner on the way home?"

Feeling vulnerable, she raises her voice. "Look, I've been in meetings all day. Do you remember the shopping list I gave you last week? You forgot to buy the toilet paper and the right type of cheese. How was I supposed to make eggplant Parmesan with cheddar cheese? Why don't *you* go and get dinner?" Everything devolves from there. The couple gets into an even deeper argument, and they go to bed in a bad mood. Later her touchiness develops into a more general pattern of behavior ("Well, I wouldn't have missed the turn if you'd given me more than five seconds to switch lanes!"), and the cycle continues.

SINCE IT'S IMPOSSIBLE to avoid either relevant or irrelevant emotional influences altogether, is there anything we can do to keep relationships from deteriorating this way? One simple piece of advice I'd offer is to pick a partner who would make this downward spiral less likely. But how do you do this? Of course, you can avail yourself of hundreds of compatibility tests, from astrological to statistical, but I think that all you need is a river, a canoe, and two paddles.

Whenever I go canoeing, I see couples arguing as they unintentionally run aground or get hung up on a rock. Canoeing looks easier than it is, and that may be why it quickly brings couples to the brink of battle. Arguments occur far less frequently when I meet a couple for drinks or go to their home for dinner, and it isn't just because they are trying to be on their best behavior (after all, why wouldn't a couple also try to be on good behavior on the river?). I think it has to do with the well-established patterns of behavior people have for their normal, day-to-day activities (arguing vehemently at the table in front of strangers is pretty much a no-no in most families).

But when you're on a river, the situation is largely new. There isn't a clear protocol. The river is unpredictable, and canoes tend to drift and turn in ways you don't anticipate. (This situation is very much like life, which is full of new and surprising stresses and roadblocks.) There's also a fuzzy kind of division of labor between the front and back (or bow and stern, if you want to be technical). This context offers plenty of opportunities to establish and observe fresh patterns of behavior.

So if you're half of a couple, what happens when you go canoeing? Do you or your partner start blaming each other every time the canoe seems to misbehave ("Didn't you see that rock?")? Do you get into a huge battle that ends with one or both of you jumping overboard, swimming to shore, and not speaking for an hour? Or, when you hit a rock, do you work together trying to figure out who should do what, and get along as best you can?*

This means that before committing to any long-term relationship you should first explore your joint behavior in environments that don't have well-defined social protocols (for example, I think that couples should plan their weddings

before they decide to marry and go ahead with the marriage only if they still like each other). It also means that it is worthwhile to keep an eye open for deteriorating patterns of behavior. When we observe early-warning signs, we should take swift action to correct an undesirable course before the unfortunate patterns of dealing with each other fully develop.

THE FINAL LESSON is this: both in canoes and in life, it behooves us to give ourselves time to cool off before we DECIDE to take any action. If we don't, our DECISION might just crash into the future. And finally, should you ever think about scheduling a makeup session on top of mine, remember how I DECIDED to respond last time. I am not saying I would do it again, but when emotions take over, who knows?

Chapter 11
Lessons from Our Irrationalities

Why We Need to Test Everything

We humans are fond of the notion that we are objective, rational, and logical. We take pride in the "fact" that we make decisions based on reason. When we decide to invest our money, buy a home, choose schools for our kids, or pick a medical treatment, we usually assume that the choices we make are the right ones.

This is sometimes true, but it is also the case that our cognitive biases often lead us astray, particularly when we have to make big, difficult, painful choices. As an illustration, allow me to share a personal story about several of my own biases that resulted in a major decision—the outcome of which affects me every day.

As YOU KNOW by now, I was pretty badly damaged after my accident. Among other charred parts of my body, my right hand was burned down to the bone in some places. Three days after I arrived at the hospital, one of my doctors entered my room and told me that my right arm was so swollen that the pressure was preventing blood flow to my hand. He said that he would have to operate immediately if we were to have the slightest chance of salvaging it. The doctor neatly arranged a tray of what seemed like dozens of scalpels and explained that in order to reduce the pressure, he would have to cut through the skin to drain the liquid and reduce the inflammation. He also told me that since my heart and lungs were not functioning very well, he would have to perform the operation without anesthesia.

What followed was the type of medical treatment that you might expect if you lived in the Middle Ages. One of the nurses held my raw left arm and shoulder in place, and another used all of her weight to press down my right shoulder and arm. I watched the scalpel pierce my skin and advance slowly downward from my shoulder, tearing slowly to my elbow. I felt as if the doctor were ripping me open with a blunt, rusty garden hoe. The pain was unimaginable; it left me gasping. I thought I would die from it. Then it came again, a second time, starting at my elbow and moving downward to my wrist.

I screamed and begged them to stop. "You're killing me!" I cried. No matter what I said, no matter how much I begged, they did not stop. "I can't stand it anymore!" I screamed, over and over again. They only held me tighter. I had no control.

Finally the doctor told me he was almost finished and that the rest would pass quickly. Then he gave me a tool to help me through my torture: counting. He told me to count to ten, as slowly as I could bear. One, two, three . . . I felt time slow down. Engulfed in pain, all I had was the slow counting. Four, five, six . . . the pain moved up and down my arm as he cut me again. Seven, eight, nine . . . I will never forget the feeling of the tearing flesh, the excruciating anguish, and the waiting . . .

as long as I could . . . before yelling “TEN!”

The doctor stopped cutting. The nurses released their hold. I felt like an ancient warrior who had nobly conquered his suffering while being torn limb from limb. I was exhausted. “Very good,” the doctor said. “I have made four incisions in your arm, from shoulder to wrist; now we have just a few more cuts and it will *really* be over.”

My imagined warrior dissolved into defeat. I had used all my energy to convince myself to hold on as long as possible, certain that the ten count would bring the end. I perceived the new, impending pain—which had seemed almost manageable a few seconds earlier—with full-blown terror. How could I survive this again?

“Please, I will do anything. Just stop!” I begged, but I had no say in the matter. They held me even tighter. “Wait, wait,” I tried, for the last time, but the doctor proceeded to make cuts in each of my fingers. All the while I counted backward, shouting every time I reached ten. I counted over and over until he finally stopped cutting. My hand was unbelievably sensitive and the pain was endless, but I was still conscious and alive. Bleeding and crying, I was left to rest.

At the time, I didn’t understand the importance of this operation, nor how counting can help a person who is under duress.* The surgeon who operated on my arm was trying valiantly to save it, against the advice of some other physicians. He also caused me great suffering that day, the memory of which lasted for years. But his efforts were successful.

Several months later, a new assembly of doctors told me that my painfully rescued arm was not doing very well and that it would be best to amputate it below the elbow. I reacted to the whole idea with revulsion, but they put their cold, rational case before me: Replacing my arm with a hook would dramatically reduce my daily pain, they said. It would cut down on the number of operations I would have to undergo. The hook would be relatively comfortable and, once I’d adapted to it, more functional than my injured hand. They also told me that I could choose a prosthetic arm that would make me look less like Captain Hook, though this type of prosthesis would be less functional.

This was a very difficult decision. Despite the lack of functionality and pain I endured every day, I was loath to lose my arm. I just could not see how I would ever live without it, nor how I could possibly adapt to using a hook or a piece of flesh-colored plastic. In the end, I decided to hold on to my poor, limited, eviscerated limb and make the best of things.

Fast-forward to 2010. Over the last twenty-plus years I’ve produced a lot of written material, mostly in the form of academic papers, but I can’t physically type for very long. I can type perhaps a page a day and answer a few e-mails by pecking short sentences, but if I try to do more, I feel deep pain in my hand that lasts hours or days. I can’t lift or straighten my fingers; when I try, it feels as if the joints are being pulled from their sockets. On a more positive note, I’ve learned to rely heavily on the help of able assistants and a little on voice recognition software, and I have also figured out, at least to some degree, how to live with daily pain.

It’s difficult, from my current standpoint, to say whether I made the right decision

about keeping my arm. Given the arm's limited functionality, the pain I experienced and am still experiencing, and what I now know about flawed decision making, I suspect that keeping my arm was, in a cost/benefit sense, a mistake.

Let's look at the biases that affected me. First, it was difficult for me to accept the doctors' recommendation because of two related psychological forces we call the endowment effect and loss aversion. Under the influence of these biases, we commonly overvalue what we have and we consider giving it up to be a loss. Losses are psychologically painful, and, accordingly, we need a lot of extra motivation to be willing to give something up. The endowment effect made me overvalue my arm, because it was mine and I was attached to it, while loss aversion made it difficult for me to give it up, even when doing so might have made sense.

A second irrational influence is known as the status quo bias. Generally speaking, we tend to want to keep things as they are; change is difficult and painful, and we'd rather not change anything if we can help it. In my particular case, I preferred not to take any action (partly because I feared that I would regret a decision to make a change) and live with my arm, however damaged.

A third human quirk had to do with the irreversibility of the decision. As it turns out, making regular choices is hard enough, but making irreversible decisions is especially difficult. We think long and hard about buying a house or choosing a career because we don't have much data about what the future holds for us. But what if you knew that your decision would be etched in stone and that you could never change your job or house? It's pretty scary to make any choice when you have to live with the result for the rest of your life. In my case, I had trouble with the idea that once the surgery was done, my hand would be gone forever.

Finally, when I thought about the prospect of losing my forearm and hand, I wondered about whether I could ever adapt. What would it feel like to use a hook or a prosthesis? How would people look at me? What would it be like when I wanted to shake someone's hand, write a note, or make love?

Now, if I had been a perfectly rational, calculating being who lacked any trace of emotional attachment to my arm, I would not have been bothered by the endowment effect, loss aversion, the status quo bias, or the irreversibility of my decision. I would have been able to accurately predict what the future with an artificial arm would hold for me, and as a consequence I would probably have been able to see my situation the way my doctors did. If I were that rational, I might very well have chosen to follow their advice, and most likely I would have eventually adapted to the new apparatus (as we learned in chapter 6, "On Adaptation"). But I was not so rational, and I kept my arm—resulting in more operations, reduced flexibility, and frequent pain.

All of this sounds like the stories old people tell (try this with a slow, Eastern European accent: "If I'd only known then what I know now, life would have been different"). You might also be asking the obvious question: if the decision was wrong, why not have the amputation done now?

Again, there are a few irrational reasons for this. First, the mere idea of going back to the hospital for any treatment or operation makes me deeply depressed. In fact, even now, whenever I visit someone in hospital, the smells bring back memories of my experience and with them comes a heavy emotional burden. (As

you can probably guess, one of the things that worries me the most is the prospect of being hospitalized for a prolonged period of time.) Second, despite the fact that I understand and can analyze some of my decision biases, I still experience them. They never completely cease to influence me (this is something to keep in mind as you attempt to become a better decision maker). Third, after investing years of time and effort into making my hand function as best it can, living with the daily pain, and figuring out how to work with these limitations, I'm a victim of what we call the sunk cost fallacy. Looking back at all my efforts, I'm very reluctant to write them off and change my decision.

A fourth reason is that, twenty-some years after the injury, I have been able to rationalize my choice somewhat. As I've noted, people are fantastic rationalizing machines, and in my case I have been able to tell myself many stories about why my decision was the right one. For example, I feel a deep tickling sensation when someone touches my right arm, and I have been able to convince myself that this unique sensation gives me a wonderful way to experience the world of touch.

Finally, there is also a rational reason for keeping my arm: over the years many things have changed, including me. As a teenager, before the accident, I could have taken many different roads. As a result of my injuries, I've followed particular personal, romantic, and professional paths that more or less fit with my limitations and abilities, and I have figured out ways to function this way. If, as an eighteen-year old, I'd decided to replace my arm with a hook, my limitations and abilities would have been different. For example, maybe I could have operated a microscope and as a consequence might have become a biologist. But now, as I approach middle age and given my particular investment in organizing my life just so, it is much harder to make substantial changes.

The moral of this story? It is very difficult to make really big, important, life-changing decisions because we are all susceptible to a formidable array of decision biases. There are more of them than we realize, and they come to visit us more often than we like to admit.

Lessons from the Bible and Leeches

In the preceding chapters, we have seen how irrationality plays out in different areas of our lives: in our habits, our dating choices, our motivations at work, the way we donate money, our attachments to things and ideas, our ability to adapt, and our desire for revenge. I think we can summarize our wide range of irrational behaviors with two general lessons and one conclusion:

1. We have many irrational tendencies.
2. We are often unaware of how these irrationalities influence us, which means that we don't fully understand what drives our behavior.

Ergo, We—and by that I mean You, Me, Companies, and Policy Makers—need to doubt our intuitions. If we keep following our gut and common wisdom or doing what is easiest or most habitual just because "well, things have always been done that way," we will continue to make mistakes—resulting in a lot of time, effort, heartbreak, and money going down the same old (often wrong) rabbit holes. But if we learn to question ourselves and test our beliefs, we might actually discover

when and how we are wrong and improve the ways we love, live, work, innovate, manage, and govern.

So how can we go about testing our intuitions? We have one old and tried method for this—a method whose roots are as old as the Bible. In chapter 6 of the Book of Judges, we find a guy named Gideon having a little conversation with God. Gideon, being a skeptical fellow, is not sure if it's really God he's talking to or an imagined voice in his head. So he asks the Unseen to sprinkle a little water on a fleece. "If You will save Israel by my hand, as You have said," he says to the Voice, "look, I will put a fleece of wool on the threshing floor; if there be dew on the fleece only, and it be dry upon all the ground, then shall I know that You will save Israel by my hand, as You have said."

What Gideon is proposing here is a test: If this is indeed God he's talking with, He (or She) should be able to make the fleece wet, while keeping the rest of the ground dry. What happens? Gideon gets up the next morning, discovers that the fleece is wet, and squeezes a whole bowlful of water out of it. But Gideon is a clever experimentalist. He is not certain if what happened was just by chance, whether this pattern of wetness occurs often, or whether it happens every time he leaves a fleece on the ground overnight. What Gideon needs is a control condition. So he asks God to indulge him again, only this time he runs his experiment a different way: "And Gideon said to God: 'Do not be angry with me, and I will speak just this once: let me try just once more, I ask You, with the fleece; let it now be dry only upon the fleece, and upon all the ground let there be dew.' " Gideon's control condition turns out to be successful. Lo and behold, the rest of the ground is covered with dew and the fleece is dry. Gideon has all the proof he needs, and he has learned a very important research skill.

In contrast to Gideon's careful experiment, consider the way medicine was practiced for thousands of years. Medicine has long been a profession of received wisdom; early practitioners in ancient days worked according to their own intuitions, combined with handed-down wisdom. These early physicians then passed on their accumulated knowledge to future generations. Doctors were not trained to doubt their intuitions nor to do experiments; they relied heavily on their teachers. Once their term of learning was complete, they were supremely confident in their knowledge (and many physicians continue with this practice). So they kept doing the same thing over and over again, even in the face of questionable evidence.*

For one instance of received medical wisdom gone awry, take the medicinal use of leeches. For hundreds of years, leeches were used for bloodletting—a procedure that, it was believed, helped rebalance the four humors (blood, phlegm, black bile, and yellow bile). Accordingly, the application of bloodsucking, sluglike creatures was thought to cure everything from headaches to obesity, from hemorrhoids to laryngitis, from eye disorders to mental illness. By the nineteenth century, the leech trade was booming; during the Napoleonic Wars, France imported millions upon millions of the critters. In fact, the demand for the medicinal leech was so high that the animal nearly became extinct.

Now, if you are a nineteenth-century French doctor just beginning your practice, you "know" that leeches work because, well, they've been used "successfully" for centuries. Your knowledge has been reinforced by another doctor

who already "knows" that leeches work—either from his own experience or from received wisdom. Your first patient arrives—say, a man with a pain in his knee. You drape a slimy leech onto the man's thigh, just above the knee, to relieve the pressure. The leech sucks the man's blood, draining the pressure above the joint (or so you think). Once the procedure is over, you send the man home and tell him to rest for a week. If the man stops complaining, you assume that the leech treatment worked.

Unfortunately for both of you, you didn't have the benefit of modern technology back then, so you couldn't know that a tear in the cartilage was the real culprit. Nor was there much research on the effectiveness of rest, the influence of attention from a person wearing a white coat, or the many other forms of the placebo effect (about which I wrote in some length in *Predictably Irrational*). Of course, physicians are not bad people; on the contrary, they are good and caring. The reason that most of them picked their profession is to make people healthy and happy. Ironically, it is their goodness and their desire to help each and every one of their patients that makes it so difficult for them to sacrifice some of their patients' well-being for the sake of an experiment.

Imagine, for example, that you are a nineteenth-century physician who truly believes that the leech technology works. Would you do an experiment to test your belief? What would the cost of such an experiment be in terms of human suffering? For the sake of a well-controlled experiment, you would have to divert a large group of your patients from the leech treatment into a control condition (maybe using something that looked like leeches and hurt like leeches but didn't suck any blood). What kind of doctor would assign some patients to the control group and by doing so deprive them of this useful treatment? Even worse, what kind of doctor would design a control condition that included all the suffering associated with the treatment but omitted the part that was supposed to help—just for the sake of finding out whether the treatment was as effective as he thought?

The point is this: it's very unnatural for people—even people who are trained in a field like medicine—to take on the cost associated with running experiments, particularly when they have a strong gut feeling that what they are doing or proposing is beneficial. This is where the Food and Drug Administration (FDA) comes in. The FDA requires evidence that medications have been proven to be both safe and effective. As cumbersome, expensive, and complex as the process is, the FDA remains the only agency that requires the organizations dealing with it to perform experiments to prove the efficacy and safety of proposed treatements. Thanks to such experiments, we now know that some children's cough medicines carry more risks than benefits, that surgeries for lower back pain are largely useless, that heart angioplasties and stents don't really prolong the lives of patients, and that statins, while indeed reducing cholesterol, don't effectively prevent heart diseases. And we are becoming aware of many more examples of treatments that don't work as well as originally hoped.* Certainly, people can, and do, complain about the FDA; but the accumulating evidence shows that we are far better off when we are forced to carry out controlled experiments.

THE IMPORTANCE OF experiments as one of the best ways to learn what really works and what does not seems uncontroversial. I don't see anyone wanting to abolish scientific experiments in favor of relying more heavily on gut feelings and

intuitions. But I'm surprised that the importance of experiments isn't recognized more broadly, especially when it comes to important decisions in business or public policy. Frankly, I am often amazed by the audacity of the assumptions that businesspeople and politicians make, coupled with their seemingly unlimited conviction that their intuition is correct.

But politicians and businesspeople are just people, with the same decision biases we all have, and the types of decisions they make are just as susceptible to errors in judgment as medical decisions. So shouldn't it be clear that the need for systematic experiments in business and policy is just as great?

Certainly, if I were going to invest in a company, I'd rather pick one that systematically tested its basic assumptions. Imagine how much more profitable a firm might be if, for example, its leaders truly understood the anger of customers and how a sincere apology can ease frustration (as we saw in chapter 5, "The Case for Revenge"). How much more productive might employees be if senior managers understood the importance of taking pride in one's work (as we saw in chapter 2, "The Meaning of Labor"). And imagine how much more efficient companies could be (not to mention the great PR benefits) if they stopped paying executives exorbitant bonuses and more seriously considered the relationship between payment and performance (as we saw in chapter 1, "Paying More for Less").

Taking a more experimental approach also has implications for government policies. It seems that the government often applies blanket policies to everything from bank bailouts to home weatherization programs, from agribusiness to education, without doing much experimentation. Is a $700 billion bank bailout the best way to support a faltering economy? Is paying students for good grades, showing up to class, and good behavior in classrooms the right way to motivate long-term learning? Does posting calorie counts on menus help people make healthier choices (so far the data suggest that it doesn't)?

The answers aren't clear. Wouldn't it be nice if we realized that, despite all our confidence and faith in our own judgments, our intuitions are just intuitions? That we need to collect more empirical data about how people actually behave if we want to improve our public policies and institutions? It seems to me that before spending billions on programs of unknown efficacy, it would be much smarter to run a few small experiments first and, if we have the time, maybe a few large ones as well.

As Sherlock Holmes noted, "It is a capital mistake to theorize before one has data."

BY NOW I hope it's clear that if we place human beings on a spectrum between the hyperrational Mr. Spock and the fallible Homer Simpson, we are closer to Homer than we realize. At the same time, I hope you also recognize the upside of irrationality—that some of the ways in which we are irrational are also what makes us wonderfully human (our ability to find meaning in work, our ability to fall in love with our creations and ideas, our willingness to trust others, our ability to adapt to new circumstances, our ability to care about others, and so on). Looking at irrationality from this perspective suggests that rather than strive for perfect rationality, we need to appreciate those imperfections that benefit us, recognize the ones we would like to overcome, and design the world around us in a way that takes advantage of our incredible abilities while overcoming some of

our limitations. Just as we use seat belts to protect ourselves from accidents and wear coats to keep the chill off our backs, we need to know our limitations when it comes to our ability to think and reason—particularly when making important decisions as individuals, business executives, and public officials. One of the best ways to discover our mistakes and the different ways to overcome them is by running experiments, gathering and scrutinizing data, comparing the effect of the experimental and control conditions, and seeing what's there. As Franklin Delano Roosevelt once said, "The country needs and, unless I mistake its temper, the country demands, bold, persistent experimentation. It is common sense to take a method and try it: If it fails, admit it frankly and try another. But above all, try something."[24]

I HOPE THAT you have enjoyed this book. I also fervently hope that you will doubt your intuition and run your own experiments in an effort to make better decisions. Ask questions. Explore. Turn over rocks. Question your behavior, that of your company, employees, and other businesses, and that of agencies, politicians, and governments. By doing so, we may all discover ways to overcome some of our limitations, and that's the great hope of social science.

THE END

P.S. Not really. These are only the first steps of exploring our irrational side, and the journey ahead is long and exciting.

Irrationally yours,
Dan

Thanks

One of the most wonderful things about academic life is that we get to pick our collaborators for each project. This is one area where I pride myself on making the best choices anyone can make. Over the years I've had the great fortune to work with some amazing researchers/friends. I am deeply grateful to these wonderful people for their enthusiasm and fortitude, their creativity, and also their friendship and generosity. The research I include in this book is largely a product of their efforts (see the following biographies of my outstanding collaborators), while any mistakes and omissions are mine.

In addition to my direct gratitude to my collaborators, I also thank the broader pool of psychology, economics, business school researchers, and social scientists at large. I am privileged to be able to conduct my own investigations as a part of this general agenda. The world of social science is an exciting place. New ideas are constantly generated, data collected, and theories revised (some more than others). These efforts are the result of the hard work of many brilliant individuals who are passionate about advancing our understanding of human nature. I learn new things from my fellow researchers every day and am also frequently reminded of how much I don't know (for a partial list of references and additional readings, see the end of this book).

In the process of writing this book I was forced to realize how far I am from being able to write well, and my deepest thanks go to Erin Allingham, who helped me write, Bronwyn Fryer, who helped me see more clearly, and Claire Wachtel, who helped me keep the whole thing in perspective and with a sense of humor that is rare in editors. And thank you to the HarperCollins team: Katherine Beitner, Katharine Baker, Michael Siebert, Elliott Beard, and Lynn Anderson kept the experience collaborative, engaging, and fun. I also received helpful comments and suggestions from Aline Grüneisen, Ania Jakubek, Jose Silva, Jared Wolfe, Kali Clark, Rebecca Waber, and Jason Bissey. Sophia Cui and my friends at McKinney gave me invaluable creative direction, and the team at Levine Greenberg Literary Agency were there to help in every possible way. Very special thanks also go to the person who makes my hectic life possible: Megan Hogerty.

Finally, a general sentiment of appreciation to my lovely wife, Sumi. I used to think that I was very easy to live with, but with every passing year I realize more and more how difficult it must be to live with me and, in contrast, how wonderful it is to live with you. Sumi, I will change the broken lightbulbs tonight when I get home. Actually, I will probably be late, so I will do it tomorrow. Well, you know what? I will definitely do it this weekend. I promise.

Loving,
Dan

List of Collaborators

Eduardo Andrade

Eduardo and I met at a summer program at the Center for Advanced Study at Stanford University. It was a magical summer both academically and socially. Eduardo had an office next to mine, and we got to go for walks in the hills and chat. Eduardo's main research focus is emotions, and by the end of the summer we had a few ideas related to decision making and emotions that we started working on. Eduardo is Brazilian, and his ability to cook meat and make drinks would make his country proud. Eduardo is currently a professor at the University of California, Berkeley.

Racheli Barkan

Racheli (Rachel more officially) and I became friends many years ago, when we were both graduate students. Over the years we talked about starting various research projects together, but we only really got started when she came to spend a year at Duke. As it turns out, coffee is an important ingredient for translating ideas into actions, and we had lots of fun during her visit and made a lot of progress on a wide range of projects. Racheli is incredibly knowledgeable, smart, and insightful, and I only wish we had more time together. Racheli is currently a professor at Ben-Gurion University in Israel.

Zoë Chance

Zoë is a force of creativity and kindness. Talking to her is a bit like being in an amusement park—you know it is going to be exciting and interesting, but it is hard to anticipate what direction her comments will take. Together with her love of life and mankind, she is the ideal blend of researcher and friend. Zoë is currently a PhD student at Harvard.

Hanan Frenk

When I was an undergraduate, I took Hanan's brain physiology class. It was one of my first classes, and it changed my life. Beyond the material in the class, it was Hanan's attitude toward research and openness to questions that inspired me to become a researcher myself. I still remember many of his perspectives on research and life, and I continue to live by most of them. For me, Hanan is the ideal teacher. Hanan is currently a professor at Tel Aviv University in Israel.

Jeana Frost

Jeana was one of my first graduate students at the Media Lab at MIT. She is creative and eclectic, with a wide range of interests and skills that she seems to pull from thin air. We started many projects together on information systems, online dating, and decision aids, and during this process I learned how designers think, experiment, and discover. Jeana is currently an Internet entrepreneur at large.

Ayelet Gneezy

I met Ayelet many years ago at a picnic organized by mutual friends. I had a very positive first impression of her, and my appreciation of her only increased with time. Ayelet is a wonderful person and a great friend, so it is a bit odd that the topics we decided to collaborate on were mistrust and revenge. Whatever initially drove us to explore these topics ended up being very useful both academically and personally. Ayelet is currently a professor at the University of California, San Diego. (If you happen upon another Gneezy on my list of collaborators, this is not because it is a popular last name.)

Uri Gneezy

Uri is one of the most sarcastic and creative people I have ever met. Both of these skills enable him to turn out important and useful research effortlessly and rapidly. A few years ago, I took Uri to Burning Man, and while we were there he completely fit into the atmosphere. On the way back he lost a bet and, as a consequence, was supposed to give a gift to a random person every day for a month. Sadly, once back in civilization he was unable to do so. Uri is currently a professor at the University of California, San Diego.

Emir Kamenica

I met Emir through Dražen and soon came to appreciate his range of skills and depth of economic thinking. Talking to Emir always gave me the feeling of what discussions between European philosophers in the eighteenth century must have been like—there is no hurry, and the debate is largely for its own sake. A sort of purity in discussion. I suspect that now that he is no longer a graduate student, life has changed for him a bit, but I still cherish those discussions. Emir is currently a professor at the University of Chicago.

Leonard Lee

Leonard joined the PhD program at MIT to work on topics related to e-commerce. Since we both worked long hours, we started taking breaks together late at night, and this gave us a chance to work jointly on a few research projects. The collaboration with Leonard has been great. He has endless energy and enthusiasm, and the number of experiments he can carry out during an average week is about what other people do in a semester. In addition, he is one of the nicest people I have ever met and always a delight to chat and work with. Leonard is currently a professor at Columbia University.

George Loewenstein

George is one of my first, favorite, and longest-time collaborators. He is also my role model. In my mind George is the most creative and broadest researcher in behavioral economics. He has an incredible ability to observe the world around him and find nuances of behavior that are important for our understanding of human nature as well as for policy. George is currently, and appropriately, the Herbert A. Simon Professor of Economics and Psychology at Carnegie Mellon University.

Nina Mazar

Nina came to MIT for a few days to get feedback on her research and ended up

staying for five years. During that time we had oodles of fun working together, and I came to rely on her greatly. Nina is oblivious to obstacles, and her willingness to take on large challenges led us to carry out some particularly difficult experiments in rural India. For many years I hoped that she would never decide to leave; but, alas, at some point the time came: she is currently a professor at the University of Toronto. In an alternative reality, Nina is a high-fashion designer in Milan, Italy.

Daniel Mochon

Daniel is a rare combination of intelligence, creativity, and the ability to get things done. Over the last few years we have worked on a few different projects, and his insight and ability continue to amaze me. One thing I regret is that I moved just as he was finishing his course work at MIT, and I wish we'd had more opportunities to talk and collaborate. Daniel is currently a postdoc at Yale University.

Mike Norton

Mike has an interesting mix of brilliance, self-deprecation, and a sarcastic sense of humor. He has a unique perspective on life, and he finds almost any topic interesting. I often think about research projects as journeys, and with Mike I get to go on adventures that would have been impossible with anyone else. Mike is also a fantastic singer, and if you get the chance, ask him for his version of Elvis's "Only Fools Rush In." Mike is currently a professor at Harvard.

Dražen Prelec

Dražen is one of the smartest people I have ever met and one of the main reasons I joined MIT. I think of Dražen as academic royalty: he knows what he is doing, he is sure of himself, and everything he touches turns to gold. I was hoping that by osmosis, I would get some of his style and depth, but having my office next to his was not sufficient for this. Dražen is currently a professor at MIT.

Stephen Spiller

Stephen started his academic career as a student of John Lynch. John was my PhD adviser as well. So in essence Stephen and I are academic relatives, and I feel as if he is my younger (but much taller) brother. He is smart and creative, and it has been a privilege to watch him advance in his academic adventures. Stephen is currently a doctoral student at Duke University, and if his advisers had any say in the matter, we would never let him leave.

Notes

1. Adam Smith, *An Inquiry into the Nature and Causes of the Wealth of Nations* (Chicago: University of Chicago Press, 1977), 44–45.
2. George Loewenstein, "Because It Is There: The Challenge of Mountaineering . . . for Utility Theory," *Kyklos* 52, no. 3 (1999): 315–343.
3. Laura Shapiro, *Something from the Oven: Reinventing Dinner in 1950s America* (New York: Viking, 2004).
4. www.foodnetwork.com/recipes/sandra-lee/sensuous-chocolate-truffles-recipe/index.html.
5. Mark Twain, *Europe and Elsewhere* (New York: Harper & Brothers Publishers, 1923).
6. http://tierneylab.blogs.nytimes.com.
7. Richard Munson, *From Edison to Enron: The Business of Power and What It Means for the Future of Electricity* (Westport, Conn.: Praeger Publishers, 2005), 23.
8. James Surowiecki, "All Together Now," *The New Yorker*, April 11, 2005.
9. www.openleft.com/showDiary.do?diaryId=8374, September 21, 2008.
10. The complete presentation is available at www.danariely.com/files/hotel.html.
11. Albert Wu, I-Chan Huang, Samantha Stokes, and Peter Pronovost, "Disclosing Medical Errors to Patients: It's Not What You Say, It's What They Hear," *Journal of General Internal Medicine* 24, no. 9 (2009): 1012–1017.
12. Kathleen Mazor, George Reed, Robert Yood, Melissa Fischer, Joann Baril, and Jerry Gurwitz, "Disclosure of Medical Errors: What Factors Influence How Patients Respond?" *Journal of General Internal Medicine* 21, no. 7 (2006): 704–710.
13. www.vanderbilt.edu/News/register/Mar11_02/story8.html.
14. www.businessweek.com/magazine/content/07_04/b4018001.htm.
15. http://jamesfallows.theatlantic.com/archives/2006/09/the_boiledfrog_myth_stop_the_l.php#more.
16. Andrew Potok, *Ordinary Daylight: Portrait of an Artist Going Blind* (New York: Bantam, 2003).
17. T. C. Schelling, "The Life You Save May Be Your Own," in *Problems in Public Expenditure Analysis*, ed. Samuel Chase (Washington, D.C.: Brookings Institution, 1968).
18. See Paul Slovic, " 'If I Look at the Mass I Will Never Act': Psychic Numbing and Genocide," *Judgment and Decision Making* 2, no. 2 (2007): 79–95.
19. James Estes, "Catastrophes and Conservation: Lessons from Sea Otters and the *Exxon Valdez*," *Science* 254, no. 5038 (1991): 1596.
20. Samuel S. Epstein, "American Cancer Society: The World's Wealthiest 'Nonprofit' Institution," *International Journal of Health Services* 29, no. 3 (1999): 565–578.
21. Catherine Spence, "Mismatching Money and Need," in Keith Epstein, "Crisis Mentality: Why Sudden Emergencies Attract More Funds than Do Chronic Conditions, and How Nonprofits Can Change That," *Stanford Social Innovation Review*, spring 2006: 48–57.
22. Babylonian Talmud, Sanhedrin 4:8 (37a).
23. A. G. Sanfey, J. K. Rilling, J. A. Aronson, L. E. Nystrom, and J. D. Cohen, "The

Neural Basis of Economic Decision-Making in the Ultimatum Game," *Science* 300 (2003): 1755–1758.
24. Franklin D. Roosevelt, Oglethorpe University commencement address, May 22, 1932.

Bibliography and Additional Readings

Below is a list of the papers and books on which the chapters were based, plus suggestions for additional readings on each topic.

Introduction:
Lessons from Procrastination and Medical Side Effects
Additional readings

George Akerlof, "Procrastination and Obedience," *The American Economic Review* 81, no. 2 (May 1991): 1–19.

Dan Ariely and Klaus Wertenbroch, "Procrastination, Deadlines, and Performance: Self-Control by Precommitment," *Psychological Science* 13, no. 3 (2002): 219–224.

Stephen Hoch and George Loewenstein, "Time-Inconsistent Preferences and Consumer Self-Control," *Journal of Consumer Research* 17, no. 4 (1991): 492–507.

David Laibson, "Golden Eggs and Hyperbolic Discounting," *The Quarterly Journal of Economics* 112, no. 2 (1997): 443–477.

George Loewenstein, "Out of Control: Visceral Influences on Behavior," *Organizational Behavior and Human Decision Processes* 65, no. 3 (1996): 272–292.

Ted O'Donoghue and Matthew Rabin, "Doing It Now or Later," *American Economic Review* 89, no. 1 (1999): 103–124.

Thomas Schelling, "Self-Command: A New Discipline," in *Choice over Time*, ed. George Loewenstein and John Elster (New York: Russell Sage Foundation, 1992).

Chapter 1:
Paying More for Less:
Why Big Bonuses Don't Always Work
Based on

Dan Ariely, Uri Gneezy, George Loewenstein, and Nina Mazar, "Large Stakes and Big Mistakes," *The Review of Economic Studies* 76, vol. 2 (2009): 451–469.

Racheli Barkan, Yosef Solomonov, Michael Bar-Eli, and Dan Ariely, "Clutch Players at the NBA," manuscript, Duke University, 2010.

Mihály Csíkszentmihályi, *Flow: The Psychology of Optimal Experience* (New York: Harper and Row, 1990).

Daniel Kahneman and Amos Tversky, "Prospect Theory: An Analysis of Decision under Risk," *Econometrica* 47, no. 2 (1979): 263–291.

Robert Yerkes and John Dodson, "The Relation of Strength of Stimulus to Rapidity of Habit-Formation," *Journal of Comparative Neurology and Psychology* 18 (1908): 459–482.
Robert Zajonc, "Social Facilitation," *Science* 149 (1965): 269–274.
Robert Zajonc, Alexander Heingartner, and Edward Herman, "Social Enhancement and Impairment of Performance in the Cockroach," *Journal of Personality and Social Psychology* 13, no. 2 (1969): 83–92.

Additional readings

Robert Ashton, "Pressure and Performance in Accounting Decision Setting: Paradoxical Effects of Incentives, Feedback, and Justification," *Journal of Accounting Research* 28 (1990): 148–180.
John Baker, "Fluctuation in Executive Compensation of Selected Companies," *The Review of Economics and Statistics* 20, no. 2 (1938): 65–75.
Roy Baumeister, "Choking Under Pressure: Self-Consciousness and Paradoxical Effects of Incentives on Skillful Performance," *Journal of Personality and Social Psychology* 46, no. 3 (1984): 610–620.
Roy Baumeister and Carolin Showers, "A Review of Paradoxical Performance Effects: Choking under Pressure in Sports and Mental Tests," *European Journal of Social Psychology* 16, no. 4 (1986): 361–383.
Ellen J. Langer and Lois G. Imber, "When Practice Makes Imperfect: Debilitating Effects of Overlearning," *Journal of Personality and Social Psychology* 37, no. 11 (1979): 2014–2024.
Chu-Min Liao and Richard Masters, "Self-Focused Attention and Performance Failure under Psychological Stress," *Journal of Sport and Exercise Psychology* 24, no. 3 (2002): 289–305.
Kenneth McGraw, "The Detrimental Effects of Reward on Performance: A Literature Review and a Prediction Model," in *The Hidden Costs of Reward: New Perspectives on the Psychology of Human Motivation*, ed. Mark Lepper and David Greene (New York: Erlbaum, 1978).
Dean Mobbs, Demis Hassabis, Ben Seymour, Jennifer Marchant, Nikolaus Weiskopf, Raymond Dolan. and Christopher Frith, "Choking on the Money: Reward-Based Performance Decrements Are Associated with Midbrain Activity," *Psychological Science* 20, no. 8 (2009): 955–962.

Chapter 2:
The Meaning of Labor:
What Legos Can Teach Us about the Joy of Work

Based on

Dan Ariely, Emir Kamenica, and Dražen Prelec, “Man’s Search for Meaning: The Case of Legos,” *Journal of Economic Behavior and Organization* 67, nos. 3–4 (2008): 671–677.
Glen Jensen, “Preference for Bar Pressing over ‘Freeloading’ as a Function of Number of Unrewarded Presses,” *Journal of Experimental Psychology* 65, no. 5 (1963): 451–454.
Glen Jensen, Calvin Leung, and David Hess, “ ‘Freeloading’ in the Skinner Box Contrasted with Freeloading in the Runway,” *Psychological Reports* 27 (1970): 67–73.
George Loewenstein, “Because It Is There: The Challenge of Mountaineering . . . for Utility Theory,” *Kyklos* 52, no. 3 (1999): 315–343.

Additional readings

George Akerlof and Rachel Kranton, “Economics and Identity,” *The Quarterly Journal of Economics* 115, no. 3 (2000): 715–753.
David Blustein, “The Role of Work in Psychological Health and Well-Being: A Conceptual, Historical, and Public Policy Perspective,” *American Psychologist* 63, no. 4 (2008): 228–240.
Armin Falk and Michael Kosfeld, “The Hidden Costs of Control,” *American Economic Review* 96, no. 5 (2006): 1611–1630.
I. R. Inglis, Björn Forkman, and John Lazarus, “Free Food or Earned Food? A Review and Fuzzy Model of Contrafreeloading,” *Animal Behaviour* 53, no. 6 (1997): 1171–1191.
Ellen Langer, “The Illusion of Control,” *Journal of Personality and Social Psychology* 32, no. 2 (1975): 311–328.
Anne Preston, “The Nonprofit Worker in a For-Profit World,” *Journal of Labor Economics* 7, no. 4 (1989): 438–463.

Chapter 3:
The IKEA Effect:
Why We Overvalue What We Make

Based on

Gary Becker, Morris H. DeGroot, and Jacob Marschak, “An Experimental Study of Some Stochastic Models for Wagers,” *Behavioral Science* 8, no. 3 (1963): 199–201.
Leon Festinger, *A Theory of Cognitive Dissonance* (Stanford, Calif.: Stanford University Press, 1957).
Nikolaus Franke, Martin Schreier, and Ulrike Kaiser, “The ‘I Designed It Myself’ Effect in Mass Customization,” *Management Science* 56, no. 1 (2009): 125–140.
Michael Norton, Daniel Mochon, and Dan Ariely, “The IKEA Effect:

When Labor Leads to Love," manuscript, Harvard University, 2010.

Additional readings

Hal Arkes and Catherine Blumer, "The Psychology of Sunk Cost," *Organizational Behavior and Human Decision Processes* 35, no. 1 (1985): 124–140.

Neeli Bendapudi and Robert P. Leone, "Psychological Implications of Customer Participation in Co-Production," *Journal of Marketing* 67, no. 1 (2003): 14–28.

Ziv Carmon and Dan Ariely, "Focusing on the Forgone: How Value Can Appear So Different to Buyers and Sellers," *Journal of Consumer Research* 27, no. 3 (2000): 360–370.

Daniel Kahneman, Jack Knetsch, and Richard Thaler, "Anomalies: The Endowment Effect, Loss Aversion, and Status Quo Bias," *Journal of Economic Perspectives* 5, no. 1 (1991): 193–206.

Daniel Kahneman, Jack Knetsch, and Richard Thaler, "Experimental Tests of the Endowment Effect and the Coase Theorem," *The Journal of Political Economy* 98, no. 6 (1990): 1325–1348.

Jack Knetsch, "The Endowment Effect and Evidence of Nonreversible Indifference Curves," *The American Economic Review* 79, no. 5 (1989): 1277–1284.

Justin Kruger, Derrick Wirtz, Leaf Van Boven, and T. William Altermatt, "The Effort Heuristic," *Journal of Experimental Social Psychology* 40, no. 1 (2004): 91–98.

Ellen Langer, "The Illusion of Control," *Journal of Personality and Social Psychology* 32, no. 2 (1975): 311–328.

Carey Morewedge, Lisa Shu, Daniel Gilbert, and Timothy Wilson, "Bad Riddance or Good Rubbish? Ownership and Not Loss Aversion Causes the Endowment Effect," *Journal of Experimental Social Psychology* 45, no. 4 (2009): 947–951.

Chapter 4:
The Not-Invented-Here Bias:
Why "My" Ideas Are Better than "Yours"

Based on

Zachary Shore, *Blunder: Why Smart People Make Bad Decisions* (New York: Bloomsbury USA, 2008).

Stephen Spiller, Rachel Barkan, and Dan Ariely, "Not-Invented-by-Me: Idea Ownership Leads to Higher Perceived Value," manuscript, Duke University, 2010.

Additional readings

Ralph Katz and Thomas Allen, "Investigating the Not Invented Here (NIH) Syndrome: A Look at the Performance, Tenure, and Communication Patterns of 50 R&D Project Groups," *R&D Management* 12, no. 1 (1982): 7–20.

Jozef Nuttin, Jr., "Affective Consequences of Mere Ownership: The Name Letter Effect in Twelve European Languages," *European Journal of Social Psychology* 17, no. 4 (1987): 381–402.

Jon Pierce, Tatiana Kostova, and Kurt Dirks, "The State of Psychological Ownership: Integrating and Extending a Century of Research," *Review of General Psychology* 7, no. 1 (2003): 84–107.

Jesse Preston and Daniel Wegner, "The Eureka Error: Inadvertent Plagiarism by Misattributions of Effort," *Journal of Personality and Social Psychology* 92, no. 4 (2007): 575–584.

Michal Strahilevitz and George Loewenstein, "The Effect of Ownership History on the Valuation of Objects," *Journal of Consumer Research* 25, no. 3 (1998): 276–289.

Chapter 5:
The Case for Revenge:
What Makes Us Seek Justice?

Based on

Dan Ariely, "Customers' Revenge 2.0," *Harvard Business Review* 86, no. 2 (2007): 31–42.

Ayelet Gneezy and Dan Ariely, "Don't Get Mad, Get Even: On Consumers' Revenge," manuscript, Duke University, 2010.

Keith Jensen, Josep Call, and Michael Tomasello, "Chimpanzees Are Vengeful but Not Spiteful," *Proceedings of the National Academy of Sciences* 104, no. 32 (2007): 13046–13050.

Dominique de Quervain, Urs Fischbacher, Valerie Treyer, Melanie Schellhammer, Ulrich Schnyder, Alfred Buck, and Ernst Fehr, "The Neural Basis of Altruistic Punishment," *Science* 305, no. 5688 (2004): 1254–1258.

Albert Wu, I-Chan Huang, Samantha Stokes, and Peter Pronovost, "Disclosing Medical Errors to Patients: It's Not What You Say, It's What They Hear," *Journal of General Internal Medicine* 24, no. 9 (2009): 1012–1017.

Additional readings

Robert Bies and Thomas Tripp, "Beyond Distrust: 'Getting Even' and the Need for Revenge," in *Trust in Organizations: Frontiers in Theory and Research*, ed. Roderick Kramer and Tom Tyler (Thousand Oaks, Calif.: Sage Publications, 1996).

Ernst Fehr and Colin F. Camerer, "Social Neuroeconomics: The Neural Circuitry of Social Preferences," *Trends in Cognitive Sciences* 11, no. 10 (2007): 419–427.
Marian Friestad and Peter Wright, "The Persuasion Knowledge Model: How People Cope with Persuasion Attempts," *Journal of Consumer Research* 21, no. 1 (1994): 1–31.
Alan Krueger and Alexandre Mas, "Strikes, Scabs, and Tread Separations: Labor Strife and the Production of Defective Bridgestone/Firestone Tires," *Journal of Political Economy* 112, no. 2 (2004): 253–289.
Ken-ichi Ohbuchi, Masuyo Kameda and Nariyuki Agarie, "Apology as Aggression Control: Its Role in Mediating Appraisal and Response to Harm," *Journal of Personality and Social Psychology* 56, no. 2 (1989): 219–227.
Seiji Takaku, "The Effects of Apology and Perspective Taking on Interpersonal Forgiveness: A Dissonance-Attribution Model of Interpersonal Forgiveness," *Journal of Social Psychology* 141, no. 4 (2001): 494–508.

Chapter 6:
On Adaptation:
Why We Get Used to Things (but Not All Things, and Not Always)
Based on

Henry Beecher, "Pain in Men Wounded in Battle," *Annals of Surgery* 123, no. 1 (1946): 96–105.
Philip Brickman, Dan Coates, and Ronnie Janoff-Bulman, "Lottery Winners and Accident Victims: Is Happiness Relative?" *Journal of Personality and Social Psychology* 36, no. 8 (1978): 917–927.
Andrew Clark, "Are Wages Habit-Forming? Evidence from Micro Data," *Journal of Economic Behavior & Organization* 39, no. 2 (1999): 179–200.
Reuven Dar, Dan Ariely, and Hanan Frenk, "The Effect of Past-Injury on Pain Threshold and Tolerance," *Pain* 60 (1995): 189–193.
Paul Eastwick, Eli Finkel, Tamar Krishnamurti, and George Loewenstein, "Mispredicting Distress Following Romantic Breakup: Revealing the Time Course of the Affective Forecasting Error," *Journal of Experimental Social Psychology* 44, no. 3 (2008): 800–807.
Leif Nelson and Tom Meyvis, "Interrupted Consumption: Adaptation and the Disruption of Hedonic Experience," *Journal of Marketing Research* 45 (2008): 654–664.
Leif Nelson, Tom Meyvis, and Jeff Galak, "Enhancing the Television-Viewing Experience through Commercial Interruptions," *Journal of*

Consumer Research 36, no. 2 (2009): 160–172.
David Schkade and Daniel Kahneman, "Does Living in California Make People Happy? A Focusing Illusion in Judgments of Life Satisfaction," *Psychological Science* 9, no. 5 (1998): 340–346.
Tibor Scitovsky, *The Joyless Economy: The Psychology of Human Satisfaction* (New York: Oxford University Press, 1976).

Additional readings

Dan Ariely, "Combining Experiences over Time: The Effects of Duration, Intensity Changes and On-Line Measurements on Retrospective Pain Evaluations," *Journal of Behavioral Decision Making* 11 (1998): 19–45.
Dan Ariely and Ziv Carmon, "Gestalt Characteristics of Experiences: The Defining Features of Summarized Events," *Journal of Behavioral Decision Making* 13, no. 2 (2000): 191–201.
Dan Ariely and Gal Zauberman, "Differential Partitioning of Extended Experiences," *Organizational Behavior and Human Decision Processes* 91, no. 2 (2003): 128–139.
Shane Frederick and George Loewenstein, "Hedonic Adaptation," in *Well-Being: The Foundations of Hedonic Psychology*, ed. Daniel Kahneman, Ed Diener, and Norbert Schwarz (New York: Russell Sage Foundation, 1999).
Bruno Frey, *Happiness: A Revolution in Economics* (Cambridge, Mass.: MIT Press, 2008).
Daniel Gilbert, *Stumbling on Happiness* (New York: Knopf, 2006).
Jonathan Levav, "The Mind and the Body: Subjective Well-Being in an Objective World," in *Do Emotions Help or Hurt Decision Making?* ed. Kathleen Vohs, Roy Baumeister, and George Loewenstein (New York: Russell Sage, 2007).
Sonja Lyubomirsky, "Hedonic Adaptation to Positive and Negative Experiences," in *Oxford Handbook of Stress, Health, and Coping*, ed. Susan Folkman (New York: Oxford University Press, 2010).
Sonja Lyubomirsky, *The How of Happiness: A Scientific Approach to Getting the Life You Want* (New York: Penguin, 2007).
Sonja Lyubomirsky, Kennon Sheldon, and David Schkade, "Pursuing Happiness: The Architecture of Sustainable Change," *Review of General Psychology* 9, no. 2 (2005): 111–131.

Chapter 7:
Hot or Not? Adaptation, Assortative Mating, and the Beauty Market
Based on

Leonard Lee, George Loewenstein, James Hong, Jim Young, and Dan Ariely, "If I'm Not Hot, Are You Hot or Not? Physical-Attractiveness

Evaluations and Dating Preferences as a Function of One's Own Attractiveness," *Psychological Science* 19, no. 7 (2008): 669–677.

Additional readings

Ed Diener, Brian Wolsic, and Frank Fujita, "Physical Attractiveness and Subjective Well-Being," *Journal of Personality and Social Psychology* 69, no. 1 (1995): 120–129.

Paul Eastwick and Eli Finkel, "Speed-Dating as a Methodological Innovation," *The Psychologist* 21, no. 5 (2008): 402–403.

Paul Eastwick, Eli Finkel, Daniel Mochon, and Dan Ariely, "Selective vs. Unselective Romantic Desire: Not All Reciprocity Is Created Equal," *Psychological Science* 21, no. 5 (2008): 402–403.

Elizabeth Epstein and Ruth Guttman, "Mate Selection in Man: Evidence, Theory, and Outcome," *Social Biology* 31, no. 4 (1984): 243–278.

Raymond Fisman, Sheena Iyengar, Emir Kamenica, and Itamar Simonson, "Gender Differences in Mate Selection: Evidence from a Speed Dating Experiment," *Quarterly Journal of Economics* 121, no. 2 (2006): 673–697.

Günter Hitsch, Ali Hortaçsu, and Dan Ariely, "What Makes You Click?—Mate Preferences in Online Dating," manuscript, University of Chicago, 2010.

Chapter 8: When a Market Fails: An Example from Online Dating

Based on

Jeana Frost, Zoë Chance, Michael Norton, and Dan Ariely, "People Are Experience Goods: Improving Online Dating with Virtual Dates," *Journal of Interactive Marketing* 22, no. 1 (2008): 51–61.

Fernanda Viégas and Judith Donath, "Chat Circles," paper presented at SIGCHI Conference on Human Factors in Computing Systems: The CHI Is the Limit, Pittsburgh, Pa., May 15–20, 1999.

Additional readings

Steven Bellman, Eric Johnson, Gerald Lohse and Naomi Mandel, "Designing Marketplaces of the Artificial with Consumers in Mind: Four Approaches to Understanding Consumer Behavior in Electronic Environments," *Journal of Interactive Marketing* 20, no. 1 (2006): 21–33.

Rebecca Hamilton and Debora Thompson, "Is There a Substitute for Direct Experience? Comparing Consumers' Preferences after Direct and Indirect Product Experiences," *Journal of Consumer Research* 34,

no. 4 (2007): 546–555.
John Lynch and Dan Ariely, "Wine Online: Search Costs Affect Competition on Price, Quality, and Distribution," *Marketing Science* 19, no. 1 (2000): 83–103.
Michael Norton, Joan DiMicco, Ron Caneel, and Dan Ariely, "AntiGroupWare and Second Messenger," *BT Technology Journal* 22, no. 4 (2004): 83–88.

Chapter 9:
On Empathy and Emotion:
Why We Respond to One Person Who Needs Help but Not to Many

Based on

Deborah Small and George Loewenstein, "The Devil You Know: The Effects of Identifiability on Punishment," *Journal of Behavioral Decision Making* 18, no. 5 (2005): 311–318.
Deborah Small and George Loewenstein, "Helping *a* Victim or Helping *the* Victim: Altruism and Identifiability," *Journal of Risk and Uncertainty* 26, no. 1 (2003): 5–13.
Deborah Small, George Loewenstein, and Paul Slovic, "Sympathy and Callousness: The Impact of Deliberative Thought on Donations to Identifiable and Statistical Victims," *Organizational Behavior and Human Decision Processes* 102, no. 2 (2007): 143–153.
Peter Singer, "Famine, Affluence, and Morality," *Philosophy and Public Affairs* 1, no. 1 (1972): 229–243.
Peter Singer, *The Life You Can Save: Acting Now to End World Poverty* (New York: Random House, 2009).
Paul Slovic, "Can International Law Stop Genocide When Our Moral Institutions Fail Us?" *Decision Research* (2010; forthcoming).
Paul Slovic, " 'If I Look at the Mass I Will Never Act': Psychic Numbing and Genocide," *Judgment and Decision Making* 2, no. 2 (2007): 79–95.

Additional readings

Elizabeth Dunn, Lara Aknin, and Michael Norton, "Spending Money on Others Promotes Happiness," *Science* 319, no. 5870 (2008): 1687–1688.
Keith Epstein, "Crisis Mentality: Why Sudden Emergencies Attract More Funds than Do Chronic Conditions, and How Nonprofits Can Change That," *Stanford Social Innovation Review*, spring 2006: 48–57.
David Fetherstonhaugh, Paul Slovic, Stephen Johnson, and James Friedrich, "Insensitivity to the Value of Human Life: A Study of Psychophysical Numbing," *Journal of Risk and Uncertainty* 14, no. 3 (1997): 283–300.

Karen Jenni and George Loewenstein, "Explaining the 'Identifiable Victim Effect,' " *Journal of Risk and Uncertainty* 14, no. 3 (1997): 235–257.

Thomas Schelling, "The Life You Save May Be Your Own," in *Problems in Public Expenditure Analysis*, ed. Samuel Chase (Washington, D.C.: Brookings Institution, 1968).

Deborah Small and Uri Simonsohn, "Friends of Victims: Personal Experience and Prosocial Behavior," special issue on transformative consumer research, *Journal of Consumer Research* 35, no. 3 (2008): 532–542.

Chapter 10:
The Long-Term Effects of Short-Term Emotions:
Why We Shouldn't Act on Our Negative Feelings

Based on

Eduardo Andrade and Dan Ariely, "The Enduring Impact of Transient Emotions on Decision Making," *Organizational Behavior and Human Decision Processes* 109, no. 1 (2009): 1–8.

Additional readings

Eduardo Andrade and Teck-Hua Ho, "Gaming Emotions in Social Interactions," *Journal of Consumer Research* 36, no. 4 (2009): 539–552.

Dan Ariely, Anat Bracha, and Stephan Meier, "Doing Good or Doing Well? Image Motivation and Monetary Incentives in Behaving Prosocially," *American Economic Review* 99, no. 1 (2009): 544–545.

Roland Bénabou and Jean Tirole, "Incentives and Prosocial Behavior," *American Economic Review* 96, no. 5 (2006): 1652–1678.

Ronit Bodner and Dražen Prelec, "Self-Signaling and Diagnostic Utility in Everyday Decision Making," in *Psychology of Economic Decisions*, vol. 1, ed. Isabelle Brocas and Juan Carrillo (New York: Oxford University Press, 2003).

Jennifer Lerner, Deborah Small, and George Loewenstein, "Heart Strings and Purse Strings: Carryover Effects of Emotions on Economic Decisions," *Psychological Science* 15, no. 5 (2004): 337–341.

Gloria Manucia, Donald Baumann, and Robert Cialdini, "Mood Influences on Helping: Direct Effects or Side Effects?" *Journal of Personality and Social Psychology* 46, no. 2 (1984): 357–364.

Dražen Prelec and Ronit Bodner. "Self-Signaling and Self-Control," in *Time and Decision: Economic and Psychological Perspectives on Intertemporal Choice*, ed. George Loewenstein, Daniel Read, and Roy Baumeister (New York: Russell Sage Press, 2003).

Norbert Schwarz and Gerald Clore, “Feelings and Phenomenal Experiences,” in *Social Psychology: Handbook of Basic Principles*, ed. Tory Higgins and Arie Kruglansky (New York: Guilford, 1996).
Norbert Schwarz and Gerald Clore, “Mood, Misattribution, and Judgments of Well-Being: Informative and Directive Functions of Affective States,” *Journal of Personality and Social Psychology* 45, no. 3 (1983): 513–523.
Uri Simonsohn, “Weather to Go to College,” *The Economic Journal* 120, no. 543 (2009): 270–280.

Chapter 11:
Lessons from Our Irrationalities:
Why We Need to Test Everything

Additional readings

Colin Camerer and Robin Hogarth, “The Effects of Financial Incentives in Experiments: A Review and Capital-Labor-Production Framework,” *Journal of Risk and Uncertainty* 19, no. 1 (1999): 7–42.
Robert Slonim and Alvin Roth, “Learning in High Stakes Ultimatum Games: An Experiment in the Slovak Republic,” *Econometrica* 66, no. 3 (1998): 569–596.
Richard Thaler, “Toward a Positive Theory of Consumer Choice,” *Journal of Economic Behavior and Organization* 1, no. 1 (1980): 39–60.

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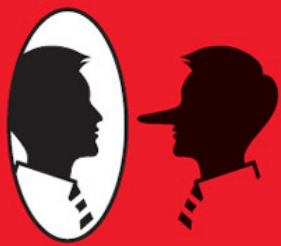
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DAN ARIELY

New York Times bestselling author of

Predictably Irrational and *The Upside of Irrationality*



THE (HONEST) TRUTH ABOUT DISHONESTY

How We Lie to Everyone—Especially Ourselves

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Dedication

To my teachers, collaborators, and students, for making research fun and exciting.

And to all the participants who took part in our experiments over the years—you are the engine of this research, and I am deeply grateful for all your help.

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Thanks

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INTRODUCTION

Why Is Dishonesty So Interesting?

There's one way to find out if a man is honest—ask him.
If he says "yes," he is a crook.

—GROUCHO MARX

My interest in cheating was first ignited in 2002, just a few months after the collapse of Enron. I was spending the week at some technology-related conference, and one night over drinks I got to meet John Perry Barlow. I knew John as the erstwhile lyricist for the Grateful Dead, but during our chat I discovered that he had also been working as a consultant for a few companies—including Enron.

In case you weren't paying attention in 2001, the basic story of the fall of the Wall Street darling went something like this: Through a series of creative accounting tricks—helped along by the blind eye of consultants, rating agencies, the company's board, and the now-defunct accounting firm Arthur Andersen, Enron rose to great financial heights only to come crashing down when its actions could no longer be concealed. Stockholders lost their investments, retirement plans evaporated, thousands of employees lost their jobs, and the company went bankrupt.

While I was talking to John, I was especially interested in his description of his own wishful blindness. Even though he consulted for Enron while the company was rapidly spinning out of control, he said he hadn't seen anything sinister going on. In fact, he had fully bought into the worldview that Enron was an innovative leader of the new economy right up until the moment the story was all over the headlines. Even more surprising, he also told me that once the information was out, he could not believe that he failed to see the signs all along. That gave me pause. Before talking to John, I assumed that the Enron disaster had basically been caused by its three sinister C-level architects (Jeffrey Skilling, Kenneth Lay, and Andrew Fastow), who together had planned and executed a large-scale accounting scheme. But here I was sitting with this guy, whom I liked and admired, who had his own story of involvement with Enron, which was one of wishful blindness—not one of deliberate dishonesty.

It was, of course, possible that John and everyone else involved with Enron were deeply corrupt, but I began to think that there may have been a different type of

dishonesty at work—one that relates more to wishful blindness and is practiced by people like John, you, and me. I started wondering if the problem of dishonesty goes deeper than just a few bad apples and if this kind of wishful blindness takes place in other companies as well.* I also wondered whether my friends and I would have behaved similarly if we had been the ones consulting for Enron.

I became fascinated by the subject of cheating and dishonesty. Where does it come from? What is the human capacity for both honesty and dishonesty? And, perhaps most important, is dishonesty largely restricted to a few bad apples, or is it a more widespread problem? I realized that the answer to this last question might dramatically change how we should try to deal with dishonesty: that is, if only a few bad apples are responsible for most of the cheating in the world, we might easily be able to remedy the problem. Human resources departments could screen for cheaters during the hiring process or they could streamline the procedure for getting rid of people who prove to be dishonest over time. But if the problem is not confined to a few outliers, that would mean that anyone could behave dishonestly at work and at home—you and I included. And if we all have the potential to be somewhat criminal, it is crucially important that we first understand how dishonesty operates and then figure out ways to contain and control this aspect of our nature.

WHAT DO WE know about the causes of dishonesty? In rational economics, the prevailing notion of cheating comes from the University of Chicago economist Gary Becker, a Nobel laureate who suggested that people commit crimes based on a rational analysis of each situation. As Tim Harford describes in his book *The Logic of Life*,* the birth of this theory was quite mundane. One day, Becker was running late for a meeting and, thanks to a scarcity of legal parking, decided to park illegally and risk a ticket. Becker contemplated his own thought process in this situation and noted that his decision had been entirely a matter of weighing the conceivable cost—being caught, fined, and possibly towed—against the benefit of getting to the meeting in time. He also noted that in weighing the costs versus the benefits, there was no place for consideration of right or wrong; it was simply about the comparison of possible positive and negative outcomes.

And thus the Simple Model of Rational Crime (SMORC) was born. According to this model, we all think and behave pretty much as Becker did. Like your average mugger, we all seek our own advantage as we make our way through the world. Whether we do this by robbing banks or writing books is inconsequential to our rational calculations of costs and benefits. According to Becker's logic, if we're short on cash and happen to drive by a convenience store, we quickly estimate how much money is in the register, consider the likelihood that we might get caught, and imagine what punishment might be in store for us if we are caught (obviously deducting possible time off for good behavior). On the basis of this cost-benefit calculation, we then decide whether it is worth it to rob the place or not. The essence of Becker's theory is that decisions about honesty, like most other decisions, are based on a cost-benefit analysis.

The SMORC is a very straightforward model of dishonesty, but the question is whether it accurately describes people's behavior in the real world. If it does, society has two clear means for dealing with dishonesty. The first is to increase the

probability of being caught (through hiring more police officers and installing more surveillance cameras, for example). The second is to increase the magnitude of punishment for people who get caught (for example, by imposing steeper prison sentences and fines). This, my friends, is the SMORC, with its clear implications for law enforcement, punishment, and dishonesty in general.

But what if the SMORC's rather simple view of dishonesty is inaccurate or incomplete? If that is the case, the standard approaches for overcoming dishonesty are going to be inefficient and insufficient. If the SMORC is an imperfect model of the causes of dishonesty, then we need to first figure out what forces *really* cause people to cheat and then apply this improved understanding to curb dishonesty. That's exactly what this book is about.*

Life in SMORCworld

Before we examine the forces that influence our honesty and dishonesty, let's consider a quick thought experiment. What would our lives be like if we all strictly adhered to the SMORC and considered only the costs and benefits of our actions?

If we lived in a purely SMORC-based world, we would run a cost-benefit analysis on all of our decisions and do what seems to be the most rational thing. We wouldn't make decisions based on emotions or trust, so we would most likely lock our wallets in a drawer when we stepped out of our office for a minute. We would keep our cash under the mattress or lock it away in a hidden safe. We would be unwilling to ask our neighbors to bring in our mail while we're on vacation, fearing that they would steal our belongings. We would watch our coworkers like hawks. There would be no value in shaking hands as a form of agreement; legal contracts would be necessary for any transaction, which would also mean that we would likely spend a substantial part of our time in legal battles and litigation. We might decide not to have kids because when they grew up, they, too, would try to steal everything we have, and living in our homes would give them plenty of opportunities to do so.

Sure, it is easy to see that people are not saints. We are far from perfect. But if you agree that SMORCworld is not a correct picture of how we think and behave, nor an accurate description of our daily lives, this thought experiment suggests that we don't cheat and steal as much as we would if we were perfectly rational and acted only in our own self-interest.

Calling All Art Enthusiasts

In April 2011, Ira Glass's show, *This American Life,*[1] featured a story about Dan Weiss, a young college student who worked at the John F. Kennedy Center for the Performing Arts in Washington, D.C. His job was to stock inventory for the center's gift shops, where a sales force of three hundred well-intentioned volunteers—mostly retirees who loved theater and music—sold the merchandise to visitors.

The gift shops were run like lemonade stands. There were no cash registers, just cash boxes into which the volunteers deposited cash and from which they made change. The gift shops did a roaring business, selling more than $400,000 worth of merchandise a year. But they had one big problem: of that amount, about $150,000 disappeared each year.

When Dan was promoted to manager, he took on the task of catching the thief. He began to suspect another young employee whose job it was to take the cash to the bank. He contacted the U.S. National Park Service's detective agency, and a detective helped him set up a sting operation. One February night, they set the trap. Dan put marked bills into the cashbox and left. Then he and the detective hid in the nearby bushes, waiting for the suspect. When the suspected staff member eventually left for the night, they pounced on him and found some marked bills in his pocket. Case closed, right?

Not so, as it turned out. The young employee stole only $60 that night, and even after he was fired, money and merchandise still went missing. Dan's next step was to set up an inventory system with price lists and sales records. He told the retirees to write down what was sold and what they received, and—you guessed it—the thievery stopped. The problem was not a single thief but the multitude of elderly, well-meaning, art-loving volunteers who would help themselves to the goods and loose cash lying around.

The moral of this story is anything but uplifting. As Dan put it, "We are going to take things from each other if we have a chance . . . many people need controls around them for them to do the right thing."

THE PRIMARY PURPOSE of this book is to examine the rational cost-benefit forces that are presumed to drive dishonest behavior but (as you will see) often do not, and the irrational forces that we think don't matter but often do. To wit, when a large amount of money goes missing, we usually think it's the work of one coldhearted criminal. But as we saw in the art lovers' story, cheating is not necessarily due to one guy doing a cost-benefit analysis and stealing a lot of money. Instead, it is more often an outcome of many people who quietly justify taking a little bit of cash or a little bit of merchandise over and over. In what follows we will explore the forces that spur us to cheat, and we'll take a closer look at what keeps us honest. We will discuss what makes dishonesty rear its ugly head and how we cheat for our own benefit while maintaining a positive view of ourselves—a facet of our behavior that enables much of our dishonesty.

Once we explore the basic tendencies that underlie dishonesty, we will turn to some experiments that will help us discover the psychological and environmental forces that increase and decrease honesty in our daily lives, including conflicts of interest, counterfeits, pledges, creativity, and simply being tired. We'll explore the social aspects of dishonesty too, including how others influence our understanding of what's right and wrong, and our capacity for cheating when others can benefit from our dishonesty. Ultimately, we will attempt to understand how dishonesty works, how it depends on the structure of our daily environment, and under what conditions we are likely to be more and less dishonest.

In addition to exploring the forces that shape dishonesty, one of the main practical benefits of the behavioral economics approach is that it shows us the internal and environmental influences on our behavior. Once we more clearly understand the forces that really drive us, we discover that we are not helpless in the face of our human follies (dishonesty included), that we can restructure our environment, and that by doing so we can achieve better behaviors and outcomes.

It's my hope that the research I describe in the following chapters will help us understand what causes our own dishonest behavior and point to some interesting ways to curb and limit it.

And now for the journey . . .

CHAPTER 1

Testing the Simple Model of Rational Crime (SMORC)

Let me come right out and say it. They cheat. You cheat. And yes, I also cheat from time to time.

As a college professor, I try to mix things up a bit in order to keep my students interested in the material. To this end, I occasionally invite interesting guest speakers to class, which is also a nice way to reduce the time I spend on preparation. Basically, it's a win-win-win situation for the guest speaker, the class, and, of course, me.

For one of these "get out of teaching free" lectures, I invited a special guest to my behavioral economics class. This clever, well-established man has a fine pedigree: before becoming a legendary business consultant to prominent banks and CEOs, he had earned his juris doctor and, before that, a bachelor's at Princeton. "Over the past few years," I told the class, "our distinguished guest has been helping business elites achieve their dreams!"

With that introduction, the guest took the stage. He was forthright from the get-go. "Today I am going to help you reach your dreams. Your dreams of MONEY!" he shouted with a thumping, Zumba-trainer voice. "Do you guys want to make some MONEY?"

Everyone nodded and laughed, appreciating his enthusiastic, non-buttoned-down approach.

"Is anybody here rich?" he asked. "I know I am, but you college students aren't. No, you are all poor. But that's going to change through the power of CHEATING! Let's do it!"

He then recited the names of some infamous cheaters, from Genghis Khan through the present, including a dozen CEOs, Alex Rodriguez, Bernie Madoff, Martha Stewart, and more. "You all want to be like them," he exhorted. "You want to have power and money! And all that can be yours through cheating. Pay attention, and I will give you the secret!"

With that inspiring introduction, it was now time for a group exercise. He asked the students to close their eyes and take three deep, cleansing breaths. "Imagine you have cheated and gotten your first ten million dollars," he said. "What will you do with this money? You! In the turquoise shirt!"

"A house," said the student bashfully.

"A HOUSE? We rich people call that a MANSION. You?" he said, pointing to

another student.

"A vacation."

"To the private island you own? Perfect! When you make the kind of money that great cheaters make, it changes your life. Is anyone here a foodie?"

A few students raised their hands.

"What about a meal made personally by Jacques Pépin? A wine tasting at Châteauneuf-du-Pape? When you make enough money, you can live large forever. Just ask Donald Trump! Look, we all know that for ten million dollars you would drive over your boyfriend or girlfriend. I am here to tell you that it is okay and to release the handbrake for you!"

By that time most of the students were starting to realize that they were not dealing with a serious role model. But having spent the last ten minutes sharing dreams about all the exciting things they would do with their first $10 million, they were torn between the desire to be rich and the recognition that cheating is morally wrong.

"I can sense your hesitation," the lecturer said. "You must not let your emotions dictate your actions. You must confront your fears through a cost-benefit analysis. What are the pros of getting rich by cheating?" he asked.

"You get rich!" the students responded.

"That's right. And what are the cons?"

"You get caught!"

"Ah," said the lecturer, "There is a CHANCE you will get caught. BUT—here is the secret! Getting caught cheating is not the same as getting punished for cheating. Look at Bernie Ebbers, the ex-CEO of WorldCom. His lawyer whipped out the 'Aw, shucks' defense, saying that Ebbers simply did not know what was going on. Or Jeff Skilling, former CEO of Enron, who famously wrote an e-mail saying, 'Shred the documents, they're onto us.' Skilling later testified that he was just being 'sarcastic'! Now, if these defenses don't work, you can always skip town to a country with no extradition laws!"

Slowly but surely, my guest lecturer—who in real life is a stand-up comedian named Jeff Kreisler and the author of a satirical book called *Get Rich Cheating*—was making a hard case for approaching financial decisions on a purely cost-benefit basis and paying no attention to moral considerations. Listening to Jeff's lecture, the students realized that from a perfectly rational perspective, he was absolutely right. But at the same time they could not help but feel disturbed and repulsed by his endorsement of cheating as the best path to success.

At the end of the class, I asked the students to think about the extent to which their own behavior fit with the SMORC. "How many opportunities to cheat without getting caught do you have in a regular day?" I asked them. "How many of these opportunities do you take? How much more cheating would we see around us if everyone took Jeff's cost-benefit approach?"

Setting Up the Testing Stage

Both Becker's and Jeff's approach to dishonesty are comprised of three basic elements: (1) the benefit that one stands to gain from the crime; (2) the probability of getting caught; and (3) the expected punishment if one is caught. By comparing the first

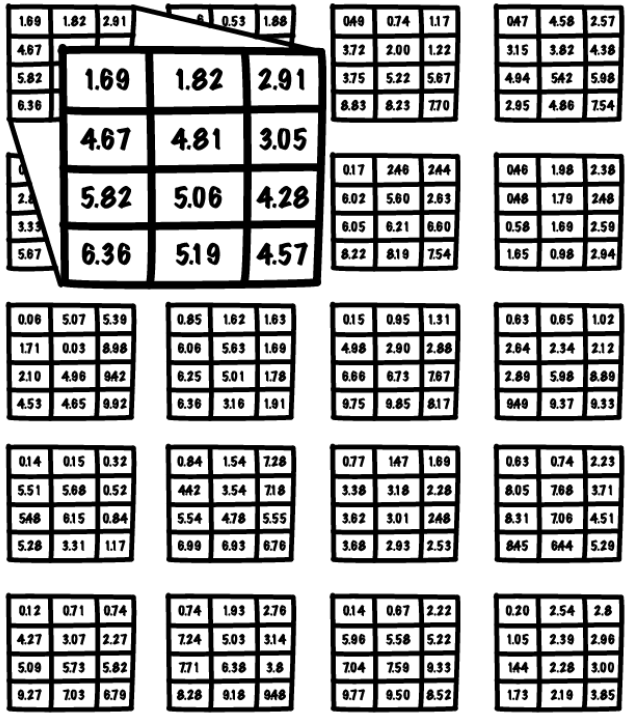
component (the gain) with the last two components (the costs), the rational human being can determine whether committing a particular crime is worth it or not.

Now, it could be that the SMORC is an accurate description of the way people make decisions about honesty and cheating, but the uneasiness experienced by my students (and myself) with the implications of the SMORC suggests that it's worth digging a bit further to figure out what is really going on. (The next few pages will describe in some detail the way we will measure cheating throughout this book, so please pay attention.)

My colleagues Nina Mazar (a professor at the University of Toronto) and On Amir (a professor at the University of California at San Diego) and I decided to take a closer look at how people cheat. We posted announcements all over the MIT campus (where I was a professor at the time), offering students a chance to earn up to $10 for about ten minutes of their time.* At the appointed time, participants entered a room where they sat in chairs with small desks attached (the typical exam-style setup). Next, each participant received a sheet of paper containing a series of twenty different matrices (structured like the example you see on the next page) and were told that their task was to find in each of these matrices two numbers that added up to 10 (we call this the matrix task, and we will refer to it throughout much of this book). We also told them that they had five minutes to solve as many of the twenty matrices as possible and that they would get paid 50 cents per correct answer (an amount that varied depending on the experiment). Once the experimenter said, "Begin!" the participants turned the page over and started solving these simple math problems as quickly as they could.

Below is a sample of what the sheet of paper looked like, with one matrix enlarged. How quickly can you find the pair of numbers that adds up to 10?

Figure 1: Matrix Task



This was how the experiment started for all the participants, but what happened at the end of the five minutes was different depending on the particular condition.

Imagine that you are in the control condition and you are hurrying to solve as many of the twenty matrices as possible. After a minute passes, you've solved one. Two more minutes pass, and you're up to three. Then time is up, and you have four completed matrices. You've earned $2. You walk up to the experimenter's desk and hand her your solutions. After checking your answers, the experimenter smiles approvingly. "Four solved," she says and then counts out your earnings. "That's it," she says, and you're on your way. (The scores in this control condition gave us the actual level of performance on this task.)

Now imagine you are in another setup, called the shredder condition, in which you have the opportunity to cheat. This condition is similar to the control condition, except that after the five minutes are up the experimenter tells you, "Now that you've finished, count the number of correct answers, put your worksheet through the shredder at the back of the room, and then come to the front of the room and tell me how many matrices you solved correctly." If you were in this condition you would dutifully count your answers, shred your worksheet, report your performance, get paid, and be on your way.

If you were a participant in the shredder condition, what would you do? Would you cheat? And if so, by how much?

With the results for both of these conditions, we could compare the performance in the control condition, in which cheating was impossible, to the reported performance in the shredder condition, in which cheating was possible. If the scores were the same, we would conclude that no cheating had occurred. But if we saw that, statistically speaking, people performed "better" in the shredder condition, then we could conclude that our participants overreported their performance (cheated) when they had the opportunity to shred the evidence. And the degree of this group's cheating would be the difference in the number of matrices they claimed to have solved correctly above and beyond the number of matrices participants actually solved correctly in the control condition.

Perhaps somewhat unsurprisingly, we found that given the opportunity, many people did fudge their score. In the control condition, participants solved on average four out of the twenty matrices. Participants in the shredder condition claimed to have solved an average of six—two more than in the control condition. And this overall increase did not result from a few individuals who claimed to solve a lot more matrices, but from lots of people who cheated by just a little bit.

More Money, More Cheating?

With this basic quantification of dishonesty under our belts, Nina, On, and I were ready to investigate what forces motivate people to cheat more and less. The SMORC tells us that people *should* cheat more when they stand a chance of getting more money without being caught or punished. That sounds both simple and intuitively appealing, so we decided to test it next. We set up another version of the matrix experiment, only this time we varied the amount of money the participants would get for solving each matrix correctly. Some participants were promised 25 cents per question; others were promised 50 cents, $1, $2, or $5. At the highest level, we promised some participants a whopping $10 for each correct answer. What do you think happened? Did the amount of cheating increase with the amount of money offered?

Before I divulge the answer, I want to tell you about a related experiment. This time, rather than taking the matrix test themselves, we asked another group of participants to guess how many answers those in the shredder condition would claim to solve correctly at each level of payment. Their predictions were that the claims of correctly solved matrices would increase as the amount of money went up. Essentially, their intuitive theory was the same as the premise of the SMORC. But they were wrong. It turned out that when we looked at the magnitude of cheating, our participants added two questions to their scores on average, regardless of the amount of money they could make per question. In fact, the amount of cheating was slightly *lower* when we promised our participants the highest amount of $10 for each correct answer.

Why wouldn't the level of cheating increase with the amount of money offered? Why was cheating slightly lower at the highest level of payment? This insensitivity to the amount of reward suggests that dishonesty is most likely not an outcome of a cost-benefit analysis. If it were, the increase in the benefit (the amount of money offered) would lead to more cheating. And why was the level of cheating lowest when the

payment was greatest? I suspect that when the amount of money that the participants could make per question was $10, it was harder for them to cheat and still feel good about their own sense of integrity (we will come back to this later). At $10 per matrix, we're not talking about cheating on the level of, say, taking a pencil from the office. It's more akin to taking several boxes of pens, a stapler, and a ream of printer paper, which is much more difficult to ignore or rationalize.

To Catch a Thief

Our next experiment looked at what might happen if participants felt that there was a higher probability of getting caught cheating. Basically, we inserted the mental equivalent of a partially operating security camera into the experiment.

We asked one group of participants to shred one half of their worksheet—which meant that if they were dishonest, we might find some evidence of it. We asked a second group to shred the whole work sheet, meaning that they could get off scot-free. Finally, we asked a third group to shred the whole worksheet, leave the testing room, and pay themselves from a sizable bowl of money filled with more than $100 in small bills and coins. In this self-paying condition, participants could not only cheat and get away with it, but they could also help themselves to a lot of extra cash.

Again, we asked a different group to predict how many questions, on average, participants would claim to solve correctly in each condition. Once again, they predicted that the human tendency for dishonesty would follow the SMORC and that participants would claim to solve more matrices as the probability of getting caught decreased.

What did we find? Once again, lots of people cheated, but just by a bit, and the level of cheating was the same across all three conditions (shredding half, shredding all, shredding all and self-paying).

NOW, YOU MIGHT wonder if the participants in our experiments really believed that in our experimental setting, they could cheat and not get caught. To make it clear that this was indeed the case, Racheli Barkan (a professor at Ben-Gurion University of the Negev), Eynav Maharabani (a master's candidate working with Racheli), and I carried out another study where either Eynav or a different research assistant, Tali, proctored the experiment. Eynav and Tali were similar in many ways—but Eynav is noticeably blind, which meant that it was easier to cheat when she was in charge. When it was time to pay themselves from the pile of money that was placed on the table in front of the experimenter, participants could grab as much of the cash as they wanted and Eynav would not be able to see them do so.

So did they cheat Eynav to a greater degree? They still took a bit more money than they deserved, but they cheated just as much when Tali supervised the experiments as they did when Eynav was in charge.

These results suggest that the probability of getting caught doesn't have a substantial influence on the amount of cheating. Of course, I am not arguing that people are entirely uninfluenced by the likelihood of being caught—after all, no one is going to steal a car when a policeman is standing nearby—but the results show that getting caught does not have as great an influence as we tend to expect, and it

certainly did not play a role in our experiments.

YOU MIGHT BE wondering whether the participants in our experiments were using the following logic: "If I cheat by only a few questions, no one will suspect me. But if I cheat by more than a small amount, it may raise suspicion and someone might question me about it."

We tested this idea in our next experiment. This time, we told half of the participants that the average student in this experiment solves about four matrices (which was true). We told the other half that the average student solves about eight matrices. Why did we do this? Because if the level of cheating is based on the desire to avoid standing out, then our participants would cheat in both conditions by a few matrices beyond what they believed was the average performance (meaning that they would claim to solve around six matrices when they thought the average was four and about ten matrices when they thought the average was eight).

So how did our participants behave when they expected others to solve more matrices? They were not influenced even to a small degree by this knowledge. They cheated by about two extra answers (they solved four and reported that they had solved six) regardless of whether they thought that others solved on average four or eight matrices.

This result suggests that cheating is not driven by concerns about standing out. Rather, it shows that our sense of our own morality is connected to the amount of cheating we feel comfortable with. Essentially, we cheat up to the level that allows us to retain our self-image as reasonably honest individuals.

Into the Wild

Armed with this initial evidence against the SMORC, Racheli and I decided to get out of the lab and venture into a more natural setting. We wanted to examine common situations that one might encounter on any given day. And we wanted to test "real people" and not just students (though I have discovered that students don't like to be told that they are not real people). Another component missing from our experimental paradigm up to that point was the opportunity for people to behave in positive and benevolent ways. In our lab experiments, the best our participants could do was not cheat. But in many real-life situations, people can exhibit behaviors that are not only neutral but are also charitable and generous. With this added nuance in mind, we looked for situations that would let us test both the negative and the positive sides of human nature.

IMAGINE A LARGE farmer's market spanning the length of a street. The market is located in the heart of Be'er Sheva, a town in southern Israel. It's a hot day, and hundreds of merchants have set out their wares in front of the stores that line both sides of the street. You can smell fresh herbs and sour pickles, freshly baked bread and ripe strawberries, and your eyes wander over plates of olives and cheese. The sound of merchants shouting praises of their goods surrounds you: *"Rak ha yom!"* (only today), *"Matok!"* (sweet), *"Bezol!"* (cheap).

Eynav and Tali entered the market and headed in different directions, Eynav using a white cane to navigate the market. Each of them approached a few vegetable vendors and asked each of the sellers to pick out two kilos (about 4.5 pounds) of tomatoes for them while they went on another errand. Once they made their request, they left for about ten minutes, returned to pick up their tomatoes, paid, and left. From there they took the tomatoes to another vendor at the far end of the market who had agreed to judge the quality of the tomatoes from each seller. By comparing the quality of the tomatoes that were sold to Eynav and to Tali, we could figure out who got better produce and who got worse.

Did Eynav get a raw deal? Keep in mind that from a purely rational perspective, it would have made sense for the seller to choose his worst-looking tomatoes for her. After all, she could not possibly benefit from their aesthetic quality. A traditional economist from, say, the University of Chicago might even argue that in an effort to maximize the social welfare of everyone involved (the seller, Eynav, and the other consumers), the seller should have sold her the worst-looking tomatoes, keeping the pretty ones for people who could also enjoy that aspect of the tomatoes. As it turned out, the visual quality of the tomatoes chosen for Eynav was not worse and, in fact, was superior to those chosen for Tali. The sellers went out of their way, and at some cost to their business, to choose higher-quality produce for a blind customer.

WITH THOSE OPTIMISTIC results, we next turned to another profession that is often regarded with great suspicion: cab drivers. In the taxi world, there is a popular stunt called “long hauling,” which is the official term for taking passengers who don’t know their way around to their destination via a lengthy detour, sometimes adding substantially to the fare. For example, a study of cab drivers in Las Vegas found that some cabbies drive from McCarran International Airport to the Strip by going through a tunnel to Interstate 215, which can mount to a fare of $92 for what should be a two-mile journey.[1]

Given the reputation that cabbies have, one has to wonder whether they cheat in general and whether they would be more likely to cheat those who cannot detect their cheating. In our next experiment we asked Eynav and Tali to take a cab back and forth between the train station and Ben-Gurion University of the Negev twenty times. The way the cabs on this particular route work is as follows: if you have the driver activate the meter, the fare is around 25 NIS (about $7). However, there is a customary flat rate of 20 NIS (about $5.50) if the meter is not activated. In our setup, both Eynav and Tali always asked to have the meter activated. Sometimes drivers would tell the “amateur” passengers that it would be cheaper not to activate the meter; regardless, both of them always insisted on having the meter activated. At the end of the ride, Eynav and Tali asked the cab driver how much they owed them, paid, left the cab, and waited a few minutes before taking another cab back to the place they had just left.

Looking at the charges, we found that Eynav paid less than Tali, despite the fact that they both insisted on paying by the meter. How could this be? One possibility was that the drivers had taken Eynav on the shortest and cheapest route and had taken Tali for a longer ride. If that were the case, it would mean that the drivers had not cheated Eynav but that they had cheated Tali to some degree. But Eynav had a

different account of the results. “I heard the cab drivers activate the meter when I asked them to,” she told us, “but later, before we reached our final destination, I heard many of them turn the meter off so that the fare would come out close to twenty NIS.” “That certainly never happened to me,” Tali said. “They never turned off the meter, and I always ended up paying around twenty-five NIS.”

There are two important aspects to these results. First, it’s clear that the cab drivers did not perform a cost-benefit analysis in order to optimize their earnings. If they had, they would have cheated Eynav more by telling her that the meter reading was higher than it really was or by driving her around the city for a bit. Second, the cab drivers did better than simply not cheat; they took Eynav’s interest into account and sacrificed some of their own income for her benefit.

Making Fudge

Clearly there’s a lot more going on here than Becker and standard economics would have us believe. For starters, the finding that the level of dishonesty is not influenced to a large degree (to any degree in our experiments) by the amount of money we stand to gain from being dishonest suggests that dishonesty is not an outcome of simply considering the costs and benefits of dishonesty. Moreover, the results showing that the level of dishonesty is unaltered by changes in the probability of being caught makes it even less likely that dishonesty is rooted in a cost-benefit analysis. Finally, the fact that many people cheat just a little when given the opportunity to do so suggests that the forces that govern dishonesty are much more complex (and more interesting) than predicted by the SMORC.

What is going on here? I’d like to propose a theory that we will spend much of this book examining. In a nutshell, the central thesis is that our behavior is driven by two opposing motivations. On one hand, we want to view ourselves as honest, honorable people. We want to be able to look at ourselves in the mirror and feel good about ourselves (psychologists call this ego motivation). On the other hand, we want to benefit from cheating and get as much money as possible (this is the standard financial motivation). Clearly these two motivations are in conflict. How can we secure the benefits of cheating and at the same time still view ourselves as honest, wonderful people?

This is where our amazing cognitive flexibility comes into play. Thanks to this human skill, as long as we cheat by only a little bit, we can benefit from cheating and still view ourselves as marvelous human beings. This balancing act is the process of rationalization, and it is the basis of what we’ll call the “fudge factor theory.”

To give you a better understanding of the fudge factor theory, think of the last time you calculated your tax return. How did you make peace with the ambiguous and unclear decisions you had to make? Would it be legitimate to write off a portion of your car repair as a business expense? If so, what amount would you feel comfortable with? And what if you had a second car? I’m not talking about justifying our decisions to the Internal Revenue Service (IRS); I’m talking about the way we are able to justify our exaggerated level of tax deductions to ourselves.

Or let’s say you go out to a restaurant with friends and they ask you to explain a work project you’ve been spending a lot of time on lately. Having done that, is the

dinner now an acceptable business expense? Probably not. But what if the meal occurred during a business trip or if you were hoping that one of your dinner companions would become a client in the near future? If you have ever made allowances of this sort, you too have been playing with the flexible boundaries of your ethics. In short, I believe that all of us continuously try to identify the line where we can benefit from dishonesty without damaging our own self-image. As Oscar Wilde once wrote, "Morality, like art, means drawing a line somewhere." The question is: where is the line?

I THINK JEROME K. Jerome got it right in his 1889 novel, *Three Men in a Boat (to Say Nothing of the Dog)*, in which he tells a story about one of the most famously lied-about topics on earth: fishing. Here's what he wrote:

> I knew a young man once, he was a most conscientious fellow and, when he took to fly-fishing, he determined never to exaggerate his hauls by more than twenty-five per cent.
>
> "When I have caught forty fish," said he, "then I will tell people that I have caught fifty, and so on. But I will not lie any more than that, because it is sinful to lie."

Although most people haven't consciously figured out (much less announced) their acceptable rate of lying like this young man, this overall approach seems to be quite accurate; each of us has a limit to how much we can cheat before it becomes absolutely "sinful."

Trying to figure out the inner workings of the fudge factor—the delicate balance between the contradictory desires to maintain a positive self-image and to benefit from cheating—is what we are going to turn our attention to next.

CHAPTER 2

Fun with the Fudge Factor

Here's a little joke for you:

Eight-year-old Jimmy comes home from school with a note from his teacher that says, "Jimmy stole a pencil from the student sitting next to him." Jimmy's father is furious. He goes to great lengths to lecture Jimmy and let him know how upset and disappointed he is, and he grounds the boy for two weeks. "And just wait until your mother comes home!" he tells the boy ominously. Finally he concludes, "Anyway, Jimmy, if you needed a pencil, why didn't you just say something? Why didn't you simply ask? You know very well that I can bring you dozens of pencils from work."

If we smirk at this joke, it's because we recognize the complexity of human dishonesty that is inherent to all of us. We realize that a boy stealing a pencil from a classmate is definitely grounds for punishment, but we are willing to take many pencils from work without a second thought.

To Nina, On, and me, this little joke suggested the possibility that certain types of activities can more easily loosen our moral standards. Perhaps, we thought, if we increased the psychological distance between a dishonest act and its consequences, the fudge factor would increase and our participants would cheat more. Of course, encouraging people to cheat more is not something we want to promote in general. But for the purpose of studying and understanding cheating, we wanted to see what kinds of situations and interventions might further loosen people's moral standards.

To test this idea, we first tried a university version of the pencil joke: One day, I sneaked into an MIT dorm and seeded many communal refrigerators with one of two tempting baits. In half of the refrigerators, I placed six-packs of Coca-Cola; in the others, I slipped in a paper plate with six $1 bills on it. I went back from time to time to visit the refrigerators and see how my Cokes and money were doing—measuring what, in scientific terms, we call the half-life of Coke and money.

As anyone who has been to a dorm can probably guess, within seventy-two hours all the Cokes were gone, but what was particularly interesting was that no one touched the bills. Now, the students could have taken a dollar bill, walked over to the nearby vending machine and gotten a Coke and change, but no one did.

I must admit that this is not a great scientific experiment, since students often see cans of Coke in their fridge, whereas discovering a plate with a few dollar bills on it is rather unusual. But this little experiment suggests that we human beings are ready and willing to steal something that does not explicitly reference monetary value—that is, something that lacks the face of a dead president. However, we shy away from

directly stealing money to an extent that would make even the most pious Sunday school teacher proud. Similarly, we might take some paper from work to use in our home printer, but it would be highly unlikely that we would ever take $3.50 from the petty-cash box, even if we turned right around and used the money to buy paper for our home printer.

To look at the distance between money and its influence on dishonesty in a more controlled way, we set up another version of the matrix experiment, this time including a condition where cheating was one step removed from money. As in our previous experiments, participants in the shredder condition had the opportunity to cheat by shredding their worksheets and lying about the number of matrices they'd solved correctly. When the participants finished the task, they shredded their worksheet, approached the experimenter, and said, "I solved X^* matrices, please give me X dollars."

The innovation in this experiment was the "token" condition. The token condition was similar to the shredder condition, except that the participants were paid in plastic chips instead of dollars. In the token condition, once participants finished shredding their worksheets, they approached the experimenter and said, "I solved X matrices, please give me X tokens." Once they received their chips, they walked twelve feet to a nearby table, where they handed in their tokens and received cold, hard cash.

As it turned out, those who lied for tokens that a few seconds later became money cheated by about twice as much as those who were lying directly for money. I have to confess that, although I had suspected that participants in the token condition would cheat more, I was surprised by the increase in cheating that came with being one small step removed from money. As it turns out, people are more apt to be dishonest in the presence of nonmonetary objects—such as pencils and tokens—than actual money.

From all the research I have done over the years, the idea that worries me the most is that the more cashless our society becomes, the more our moral compass slips. If being just one step removed from money can increase cheating to such a degree, just imagine what can happen as we become an increasingly cashless society. Could it be that stealing a credit card number is much less difficult from a moral perspective than stealing cash from someone's wallet? Of course, digital money (such as a debit or credit card) has many advantages, but it might also separate us from the reality of our actions to some degree. If being one step removed from money liberates people from their moral shackles, what will happen as more and more banking is done online? What will happen to our personal and social morality as financial products become more obscure and less recognizably related to money (think, for example, about stock options, derivatives, and credit default swaps)?

Some Companies Already Know This!

As scientists, we took great care to carefully document, measure, and examine the influence of being one step removed from money. But I suspect that some companies intuitively understand this principle and use it to their advantage. Consider, for example, this letter that I received from a young consultant:

Dear Dr. Ariely,

I graduated a few years ago with a BA degree in Economics from a prestigious college and have been working at an economic consulting firm, which provides services to law firms.

The reason I decided to contact you is that I have been observing and participating in a very well documented phenomenon of overstating billable hours by economic consultants. To avoid sugar coating it, let's call it cheating. From the most senior people all the way to the lowest analyst, the incentive structure for consultants encourages cheating: no one checks to see how much we bill for a given task; there are no clear guidelines as to what is acceptable; and if we have the lowest billability among fellow analysts, we are the most likely to get axed. These factors create the perfect environment for rampant cheating.

The lawyers themselves get a hefty cut of every hour we bill, so they don't mind if we take longer to finish a project. While lawyers do have some incentive to keep costs down to avoid enraging clients, many of the analyses we perform are very difficult to evaluate. Lawyers know this and seem to use it to their advantage. In effect, we are cheating on their behalf; we get to keep our jobs and they get to keep an additional profit.

Here are some specific examples of how cheating is carried out in my company:

- *A deadline was fast approaching and we were working extremely long hours. Budget didn't seem to be an issue and when I asked how much of my day I should bill, my boss (a midlevel project manager) told me to take the total amount of time I was in the office and subtract two hours, one for lunch and one for dinner. I said that I had taken a number of other breaks while the server was running my programs and she said I could count that as a mental health break that would promote higher productivity later.*

- *A good friend of mine in the office adamantly refused to overbill and consequently had an overall billing rate that was about 20 percent lower than the average. I admire his honesty, but when it was time to lay people off, he was the first to go. What kind of message does that send to the rest of us?*

- *One person bills every hour he is monitoring his email for a project, whether or not he receives any work to do. He is "on-call," he says.*

- *Another guy often works from home and seems to bill a lot, but when he is in the office he never seems to have any work to do.*

These kinds of examples go on and on. There is no doubt that I am complicit in this behavior, but seeing it more clearly makes me want to fix the problems. Do you have any advice? What would you do in my situation?

Sincerely yours,
Jonah

Unfortunately, the problems Jonah noted are commonplace, and they are a direct outcome of the way we think about our own morality. Here is another way to think about this issue: One morning I discovered that someone had broken the window of my car and stolen my portable GPS system. Certainly, I was very annoyed, but in terms of its economic impact on my financial future, this crime had a very small effect. On the other hand, think about how much my lawyers, stockbrokers, mutual fund managers, insurance agents, and others probably take from me (and all of us) over the years by slightly overcharging, adding hidden fees, and so on. Each of these actions by itself is probably not very financially significant, but together they add up to much more than a few navigation devices. At the same time, I suspect that unlike the person who took my GPS, those white-collar transgressors think of themselves as highly moral people because their actions are relatively small and, most important, several steps removed from my pocket.

The good news is that once we understand how our dishonesty increases when we are one or more steps removed from money, we can try to clarify and emphasize the links between our actions and the people they can affect. At the same time, we can try to shorten the distance between our actions and the money in question. By taking such steps, we can become more cognizant of the consequences of our actions and, with that awareness, increase our honesty.

LESSONS FROM LOCKSMITHS

Not too long ago, one of my students named Peter told me a story that captures our misguided efforts to decrease dishonesty rather nicely.

One day, Peter locked himself out of his house, so he called around to find a locksmith. It took him a while to find one who was certified by the city to unlock doors. The locksmith finally pulled up in his truck and picked the lock in about a minute.

"I was amazed at how quickly and easily this guy was able to open the door," Peter told me. Then he passed on a little lesson in morality he learned from the locksmith that day.

In response to Peter's amazement, the locksmith told Peter that locks are on doors only to keep honest people honest. "One percent of people will always be honest and never steal," the locksmith said. "Another one percent will always be dishonest and always try to pick your lock and steal your television. And the rest will be honest as long as the conditions are right—but if they are tempted enough, they'll be dishonest too. Locks won't protect you from the thieves, who can get in your house if they really want to. They will only protect you from the mostly honest people who might be tempted to try your door if it had no lock."

After reflecting on these observations, I came away thinking that the locksmith was probably right. It's not that 98 percent of people are immoral or will cheat anytime the opportunity arises; it's more likely that most of us

need little reminders to keep ourselves on the right path.

How to Get People to Cheat Less

Now that we had figured out how the fudge factor works and how to expand it, as our next step we wanted to figure out whether we could decrease the fudge factor and get people to cheat less. This idea, too, was spawned by a little joke:

A visibly upset man goes to see his rabbi one day and says, "Rabbi, you won't believe what happened to me! Last week, someone stole my bicycle from synagogue!"

The rabbi is deeply upset by this, but after thinking for a moment, he offers a solution: "Next week come to services, sit in the front row, and when we recite the Ten Commandments, turn around and look at the people behind you. And when we get to 'Thou shalt not steal,' see who can't look you in the eyes and that's your guy." The rabbi is very pleased with his suggestion, and so is the man.

At the next service, the rabbi is very curious to learn whether his advice panned out. He waits for the man by the doors of the synagogue, and asks him, "So, did it work?"

"Like a charm," the man answers. "The moment we got to 'Thou shalt not commit adultery,' I remembered where I left my bike."

What this little joke suggests is that our memory and awareness of moral codes (such as the Ten Commandments) might have an effect on how we view our own behavior.

Inspired by the lesson behind this joke, Nina, On, and I ran an experiment at the University of California, Los Angeles (UCLA). We took a group of 450 participants and split them into two groups. We asked half of them to try to recall the Ten Commandments and then tempted them to cheat on our matrix task. We asked the other half to try to recall ten books they had read in high school before setting them loose on the matrices and the opportunity to cheat. Among the group who recalled the ten books, we saw the typical widespread but moderate cheating. On the other hand, in the group that was asked to recall the Ten Commandments, we observed no cheating whatsoever. And that was despite the fact that no one in the group was able to recall all ten.

This result was very intriguing. It seemed that merely trying to recall moral standards was enough to improve moral behavior. In another attempt to test this effect, we asked a group of self-declared atheists to swear on a Bible and then gave them the opportunity to claim extra earnings on the matrix task. What did the atheists do? They did not stray from the straight-and-narrow path.

STEALING PAPER

A few years ago I received a letter from a woman named Rhonda who attended the University of California at Berkeley. She told me about a problem she'd had in her house and how a little ethical reminder helped her solve it.

She was living near campus with several other people—none of whom

knew one another. When the cleaning people came each weekend, they left several rolls of toilet paper in each of the two bathrooms. However, by Monday all the toilet paper would be gone. It was a classic tragedy-of-the-commons situation: because some people hoarded the toilet paper and took more than their fair share, the public resource was destroyed for everyone else.

After reading about the Ten Commandments experiment on my blog, Rhonda put a note in one of the bathrooms asking people not to remove toilet paper, as it was a shared commodity. To her great satisfaction, one roll reappeared in a few hours, and another the next day. In the other note-free bathroom, however, there was no toilet paper until the following weekend, when the cleaning people returned.

This little experiment demonstrates how effective small reminders can be in helping us maintain our ethical standards and, in this case, a fully stocked bathroom.

These experiments with moral reminders suggest that our willingness and tendency to cheat could be diminished if we are given reminders of ethical standards. But although using the Ten Commandments and the Bible as honesty-building mechanisms might be helpful, introducing religious tenets into society on a broader basis as a means to reduce cheating is not very practical (not to mention the fact that doing so would violate the separation of church and state). So we began to think of more general, practical, and secular ways to shrink the fudge factor, which led us to test the honor codes that many universities already use.

To discover whether honor codes work, we asked a group of MIT and Yale students to sign such a code just before giving half of them a chance to cheat on the matrix tasks. The statement read, "I understand that this experiment falls under the guidelines of the MIT/Yale honor code." The students who were not asked to sign cheated a little bit, but the MIT and Yale students who signed this statement did not cheat at all. And that was despite the fact that neither university has an honor code (somewhat like the effect that swearing on the Bible had on the self-declared atheists).

We found that an honor code worked in universities that don't have an honor code, but what about universities that have a strong honor code? Would their students cheat less all the time? Or would they cheat less only when they signed the honor code? Luckily, at the time I was spending some time at the Institute for Advanced Study at Princeton University, which was a great petri dish in which to test this idea.

Princeton University has a rigorous honor system that's been around since 1893. Incoming freshmen receive a copy of the Honor Code Constitution and a letter from the Honor Committee about the honor system, which they must sign before they can matriculate. They also attend mandatory talks about the importance of the Honor Code during their first week of school. Following the lectures, the incoming Princetonians further discuss the system with their dorm advising group. As if that weren't enough, one of the campus music groups, the Triangle Club, performs its "Honor Code Song" for the incoming class.

For the rest of their time at Princeton, students are repeatedly reminded of the honor code: they sign an honor code at the end of every paper they submit ("This paper represents my own work in accordance with University regulations"). They sign another pledge for every exam, test, or quiz ("I pledge my honor that I have not violated the honor code during this examination"), and they receive biannual reminder e-mails from the Honor Committee.

To see if Princeton's crash course on morality has a long-term effect, I waited two weeks after the freshmen finished their ethics training before tempting them to cheat —giving them the same opportunities as the students at MIT and Yale (which have neither an honor code nor a weeklong course on academic honesty). Were the Princeton students, still relatively fresh from their immersion in the honor code, more honest when they completed the matrix task?

Sadly, they were not. When the Princeton students were asked to sign the honor code, they did not cheat at all (but neither did the MIT or Yale students). However, when they were not asked to sign the honor code, they cheated just as much as their counterparts at MIT and Yale. It seems that the crash course, the propaganda on morality, and the existence of an honor code did not have a lasting influence on the moral fiber of the Princetonians.

These results are both depressing and promising. On the depressing side, it seems that it is very difficult to alter our behavior so that we become more ethical and that a crash course on morality will not suffice. (I suspect that this ineffectiveness also applies to much of the ethics training that takes place in businesses, universities, and business schools.) More generally, the results suggest that it's quite a challenge to create a long-term cultural change when it comes to ethics.

On the positive side, it seems that when we are simply reminded of ethical standards, we behave more honorably. Even better, we discovered that the "sign here" honor code method works both when there is a clear and substantial cost for dishonesty (which, in the case of Princeton, can entail expulsion) and when there is no specific cost (as at MIT and Yale). The good news is that people seem to want to be honest, which suggests that it might be wise to incorporate moral reminders into situations that tempt us to be dishonest.*

ONE PROFESSOR AT Middle Tennessee State University got so fed up with the cheating among his MBA students that he decided to employ a more drastic honor code. Inspired by our Ten Commandments experiment and its effect on honesty, Thomas Tang asked his students to sign an honor code stating that they would not cheat on an exam. The pledge also stated that they "would be sorry for the rest of their lives and go to Hell" if they cheated.

The students, who did not necessarily believe in Hell or agree that they were going there, were outraged. The pledge became very controversial, and, perhaps unsurprisingly, Tang caught a lot of heat for his effort (he eventually had to revert to the old, Hell-free pledge).

Still, I imagine that in its short existence, this extreme version of the honor code had quite an effect on the students. I also think the students' outrage indicates how effective this type of pledge can be. The future businessmen and women must have felt that the stakes were very high, or they would not have cared so much. Imagine

yourself confronted by such a pledge. How comfortable would you feel signing it? Would signing it influence your behavior? What if you had to sign it just before filling out your expense reports?

RELIGIOUS REMINDERS

The possibility of using religious symbols as a way to increase honesty has not escaped religious scholars. There is a story in the Talmud about a religious man who becomes desperate for sex and goes to a prostitute. His religion wouldn't condone this, of course, but at the time he feels that he has more pressing needs. Once alone with the prostitute, he begins to undress. As he takes off his shirt, he sees his tzitzit, an undergarment with four pieces of knotted fringe. Seeing the tzitzit reminds him of the mitzvoth (religious obligations), and he quickly turns around and leaves the room without violating his religious standards.

Adventures with the IRS

Using honor codes to curb cheating at a university is one thing, but would moral reminders of this type also work for other types of cheating and in nonacademic environments? Could they help prevent cheating on, say, tax-reporting and insurance claims? That is what Lisa Shu (a PhD student at Harvard University), Nina Mazar, Francesca Gino (a professor at Harvard University), Max Bazerman (a professor at Harvard University), and I set out to test.

We started by restructuring our standard matrix experiment to look a bit like tax reporting. After they finished solving and shredding the matrix task, we asked participants to write down the number of questions that they had solved correctly on a form we modeled after the basic IRS 1040EZ tax form. To make it feel even more as if they were working with a real tax form, it was stated clearly on the form that their income would be taxed at a rate of 20 percent. In the first section of the form, the participants were asked to report their "income" (the number of matrices they had solved correctly). Next, the form included a section for travel expenses, where participants could be reimbursed at a rate of 10 cents per minute of travel time (up to two hours, or $12) and for the direct cost of their transportation (up to another $12). This part of the payment was tax exempt (like a business expense). The participants were then asked to add up all the numbers and come up with their final net payment.

There were two conditions in this experiment: Some of the participants filled out the entire form and then signed it at the bottom, as is typically done with official forms. In this condition, the signature acted as verification of the information on the form. In the second condition, participants signed the form first and only then filled it out. That was our "moral reminder" condition.

What did we find? The participants in the sign-at-the-end condition cheated by adding about four extra matrices to their score. And what about those who signed at the top? When the signature acted as a moral reminder, participants claimed only one extra matrix. I am not sure how you feel about "only" one added matrix—after all, it

is still cheating—but given that the one difference between these two conditions was the location of the signature line, I see this outcome as a promising way to reduce dishonesty.

Our version of the tax form also allowed us to look at the requests for travel reimbursements. Now, we did not know how much time the participants really spent traveling, but if we assumed that due to randomization, the average amount of travel time was basically the same in both conditions, we could see in which condition participants claimed higher travel expenses. What we saw was that the amount of requests for travel reimbursement followed the same pattern: Those in the signature-at-the-bottom condition claimed travel expenses averaging $9.62, while those in the moral reminder (signature-at-the-top) condition claimed that they had travel expenses averaging $5.27.

ARMED WITH OUR evidence that when people sign their names to some kind of pledge, it puts them into a more honest disposition (at least temporarily), we approached the IRS, thinking that Uncle Sam would be glad to hear of ways to boost tax revenues. The interaction with the IRS went something like this:

ME: By the time taxpayers finish entering all the data onto the form, it is too late. The cheating is done and over with, and no one will say, “Oh, I need to sign this thing, let me go back and give honest answers.” You see? If people sign before they enter any data onto the form, they cheat less. What you need is a signature at the top of the form, and this will remind everyone that they are supposed to be telling the truth.

IRS: Yes, that’s interesting. But it would be illegal to ask people to sign at the top of the form. The signature needs to verify the accuracy of the information provided.

ME: How about asking people to sign twice? Once at the top and once at the bottom? That way, the top signature will act as a pledge—reminding people of their patriotism, moral fiber, mother, the flag, homemade apple pie—and the signature at the bottom would be for verification.

IRS: Well, that would be confusing.

ME: Have you looked at the tax code or the tax forms recently?

IRS: [*No reaction.*]

ME: How about this? What if the first item on the tax form asked if the taxpayer would like to donate twenty-five dollars to a task force to fight corruption? Regardless of the particular answer, the question will force people to contemplate their standing on honesty and its importance for society! And if the taxpayer donates money to this task force, they not only state an opinion, but they also put some money behind their decision, and now they might be even more likely to follow their own example.

IRS: [*Stony silence.*]

ME: This approach may have another interesting benefit: You could flag the taxpayers who decide not to donate to the task force and audit them!

IRS: Do you really want to talk about audits?*

Despite the reaction from the IRS, we were not entirely discouraged, and continued to look for other opportunities to test our "sign first" idea. We were finally (moderately) successful when we approached a large insurance company. The company confirmed our already substantiated theory that most people cheat, but only by a little bit. They told us that they suspect that very few people cheat flagrantly (committing arson, faking a robbery, and so on) but that many people who undergo a loss of property seem comfortable exaggerating their loss by 10 to 15 percent. A 32-inch television becomes 40 inches, an 18k necklace becomes 22k, and so on.

I went to their headquarters and got to spend the day with the top folks at this company, trying to come up with ways to decrease dishonest reporting on insurance claims. We came up with lots of ideas. For instance, what if people had to declare their losses in highly concrete terms and provide more specific details (where and when they bought the items) in order to allow less moral flexibility? Or if a couple lost their house in a flood, what if they had to agree on what was lost (although as we will see in chapter 8, "Cheating as an Infection," and chapter 9, "Collaborative Cheating," this particular idea might backfire). What if we played religious music when people were on hold? And of course, what if people had to sign at the top of the claim form or even next to each reported item?

As is the way with such large companies, the people I met with took the ideas to their lawyers. We waited six months and then finally heard from the lawyers—who said that they were not willing to let us try any of these approaches.

A few days later, my contact person at the insurance company called me and apologized for not being able to try any of our ideas. He also told me that there was one relatively unimportant automobile insurance form that we could use for an experiment. The form asked people to record their current odometer reading so that the insurance company could calculate how many miles they had driven the previous year. Naturally, people who want their premium to be lower (I can think of many) might be tempted to lie and underreport the actual number of miles they drove.

The insurance company gave us twenty thousand forms, and we used them to test our sign-at-the-top versus the sign-at-the-bottom idea. We kept half of the forms with the "I promise that the information I am providing is true" statement and signature line on the bottom of the page. For the other half, we moved the statement and signature line to the top. In all other respects, the two forms were identical. We mailed the forms to twenty thousand customers and waited a while, and when we got the forms back we were ready to compare the amount of driving reported on the two types of forms. What did we find?

When we estimated the amount of driving that took place over the last year, those who signed the form first appeared to have driven on average 26,100 miles, while those who signed at the end of the form appeared to have driven on average 23,700 miles—a difference of about 2,400 miles. Now, we don't know how much those who signed at the top really drove, so we don't know if they were perfectly honest—but we do know that they cheated to a much lesser degree. It is also interesting to note that this magnitude of decreased cheating (which was about 15 percent of the total amount of driving reported) was similar to the percentage of dishonesty we found in our lab experiments.

TOGETHER, THESE EXPERIMENTAL results suggest that although we commonly think about signatures as ways to verify information (and of course signatures can be very useful in fulfilling this purpose), signatures at the top of forms could also act as a moral prophylactic.

COMPANIES ARE ALWAYS RATIONAL!

Many people believe that although individuals might behave irrationally from time to time, large commercial companies that are run by professionals with boards of directors and investors will always operate rationally. I never bought into this sentiment, and the more I interact with companies, the more I find that they are actually far less rational than individuals (and the more I am convinced that anyone who thinks that companies are rational has never attended a corporate board meeting).

What do you think happened after we demonstrated to the insurance company that we could improve honesty in mileage reporting using their forms? Do you think the company was eager to emend their regular practices? They were not! Or do you think anyone asked (maybe begged) us to experiment with the much more important problem of exaggerated losses on property claims—a problem that they estimate costs the insurance industry $24 billion a year? You guessed it—no one called.

Some Lessons

When I ask people how we might reduce crime in society, they usually suggest putting more police on the streets and applying harsher punishments for offenders. When I ask CEOs of companies what they would do to solve the problem of internal theft, fraud, overclaiming on expense reports, and sabotage (when employees do things to hurt their employer with no concrete benefit to themselves), they usually suggest stricter oversight and tough no-tolerance policies. And when governments try to decrease corruption or create regulations for more honest behavior, they often push for transparency (also known as "sunshine policies") as a cure for society's ills. Of course, there is little evidence that any of these solutions work.

By contrast, the experiments described here show that doing something as simple as recalling moral standards at the time of temptation can work wonders to decrease dishonest behavior and potentially prevent it altogether. This approach works even if those specific moral codes aren't a part of our personal belief system. In fact, it's clear that moral reminders make it relatively easy to get people to be more honest—at least for a short while. If your accountant were to ask you to sign an honor code a moment before filing your taxes or if your insurance agent made you swear that you were telling the whole truth about that water-damaged furniture, chances are that tax evasion and insurance fraud would be less common.*

What are we to make of all this? First, we need to recognize that dishonesty is largely driven by a person's fudge factor and not by the SMORC. The fudge factor

suggests that if we want to take a bite out of crime, we need to find a way to change the way in which we are able to rationalize our actions. When our ability to rationalize our selfish desires increases, so does our fudge factor, making us more comfortable with our own misbehavior and cheating. The other side is true as well; when our ability to rationalize our actions is reduced, our fudge factor shrinks, making us less comfortable with misbehaving and cheating. When you consider the range of undesirable behaviors in the world from this standpoint—from banking practices to backdating stock options, from defaulting on loans and mortgages to cheating on taxes—there's a lot more to honesty and dishonesty than rational calculations.

Of course, this means that understanding the mechanisms involved in dishonesty is more complex and that deterring dishonesty is not an easy task—but it also means that uncovering the intricate relationship between honesty and dishonesty will be a more exciting adventure.

CHAPTER 2B

Golf

The income tax has made more liars out of the American people than golf has.

—WILL ROGERS

There's a scene in the movie *The Legend of Bagger Vance* where Matt Damon's character, Rannulph Junuh, is attempting to get his golf game back, but he makes a critical error and his ball ends up in the woods. After making it back onto the green, he moves a twig that is just adjacent to the ball in order to create a clear path for his shot. As he moves the twig the ball rolls a tiny bit to the side. According to the rules, he has to count it as a stroke. At that point in the match, Junuh had gained enough of a lead that if he ignored the rule, he could win, making a comeback and restoring his former glory. His youthful assistant tearfully begs Junuh to ignore the movement of the ball. "It was an accident," the assistant says, "and it's a stupid rule anyway. Plus, no one would ever know." Junuh turns to him and says stoically, "I will. And so will you."

Even Junuh's opponents suggest that most likely the ball just wobbled and returned to its former position or that the light tricked Junuh into thinking that the ball moved. But Junuh insists that the ball rolled away. The result is an honorably tied game.

That scene was inspired by a real event that occurred during the 1925 U.S. Open. The golfer, Bobby Jones, noticed that his ball moved ever so slightly as he prepared for his shot in the rough. No one saw, no one would ever have known, but he called the stroke on himself and went on to lose the match. When people discovered what he'd done and reporters began to flock to him, Jones famously asked them not to write about the event, saying "You might as well praise me for not robbing banks." This legendary moment of noble honesty is still referred to by those who love the game, and for good reason.

I think this scene—both cinematic and historic—captures the romantic ideal of golf. It's a demonstration of man versus himself, showing both his skill and nobility. Perhaps these characteristics of self-reliance, self-monitoring, and high moral standards are why golf is often used as a metaphor for business ethics (not to mention

the fact that so many businesspeople spend so much time on golf courses). Unlike other sports, golf has no referee, umpire, or panel of judges to make sure rules are followed or to make calls in questionable situations. The golfer, much like the businessperson, has to decide for him- or herself what is and is not acceptable. Golfers and businesspeople must choose for themselves what they are willing and not willing to do, since most of the time there is no one else to supervise or check their work. In fact, golf's three underlying rules are, Play the ball as it lies, play the course as you find it, and if you cannot do either, do what is fair. But "fair" is a notoriously difficult thing to determine. After all, a lot of people might judge not counting an accidental and inconsequential change in the ball's location after a movement of a twig as "fair." In fact, it might seem pretty unfair to be penalized for an incidental movement of the ball.

DESPITE THE NOBLE heritage that golfers claim for their sport, it seems that many people view the game in the same way Will Rogers did: as one that will make a cheater out of anyone. That is not terribly surprising when you stop to think about it. In golf, players hit a tiny ball across a great distance, replete with obstacles, into a very small hole. In other words, it's extremely frustrating and difficult, and when we're the ones judging our own performance, it seems that there would be many times where we might be a little extra lenient when it comes to applying the rules to our own score.

So in our quest to learn more about dishonesty, we turned to our nation's many golfers. In 2009, Scott McKenzie (a Duke undergraduate student at the time) and I carried out a study in which we asked thousands of golfers a series of questions about how they play the game and, most importantly, how they cheat. We asked them to imagine situations in which nobody could observe them (as is often the case in golf) and they could decide to follow the rules (or not) without any negative consequences. With the help of a company that manages golf courses, we e-mailed golfers around the United States, asking them to participate in a survey on golf in return for a chance to win all kinds of high-end golf equipment. About twelve thousand golfers answered our call, and here is what we learned.

Moving the Ball

"Imagine," we asked the participants, "that as the average golfer approaches their ball they realize that it would be highly advantageous if the ball would lie 4 inches away from where it is currently. How likely do you think the average golfer would be to move the ball by these 4 inches?"

This question appeared in three different versions, each describing a different approach for improving the unfortunate location of the ball (it is a curious coincidence, by the way, that in golf lingo the location of the ball is called a "lie"). How comfortable do you think the average golfer would be about moving the ball 4 inches (1) with his club; (2) with his shoe; and (3) by picking the ball up and placing it 4 inches away?

The "moving the ball" questions were designed to see whether in golf, as in our previous experiments, the distance from the dishonest action would change the

tendency to behave immorally. If distance worked in the same way as the token experiment we discussed earlier (see chapter 2, “Fun with the Fudge Factor”), we would expect to have the lowest level of cheating when the movement was carried out explicitly with one’s hand; we would see higher levels of cheating when the movement was accomplished with a shoe; and we would see the highest level of dishonesty when the distance was greatest and the movement was achieved via an instrument (a golf club) that removed the player from direct contact with the ball.

What our results showed is that dishonesty in golf, much as in our other experiments, is indeed directly influenced by the psychological distance from the action. Cheating becomes much simpler when there are more steps between us and the dishonest act. Our respondents felt that moving the ball with a club was the easiest, and they stated that the average golfer would do it 23 percent of the time. Next was kicking the ball (14 percent of the time), and finally, picking up and moving the ball was the most morally difficult way to improve the ball’s position (10 percent of the time).

These results suggest that if we pick up the ball and reposition it, there is no way we can ignore the purposefulness and intentionality of the act, and accordingly we cannot help but feel that we have done something unethical. When we kick the ball with our shoe, there is a little bit of distance from the act, but we are still the ones doing the kicking. But when the club is doing the tapping (and especially if we move the ball in a slightly haphazard and imprecise way) we can justify what we have done relatively easily. “After all,” we might say to ourselves, “perhaps there was some element of luck in exactly how the ball ended up being positioned.” In that case, we can almost fully forgive ourselves.

Taking Mulligans

Legend has it that in the 1920s, a Canadian golfer named David Mulligan was golfing at a country club in Montreal. One day, he teed off and wasn’t happy with his shot, so he reteed and tried again. According to the story, he called it a “correction shot,” but his partners thought “mulligan” was a better name, and it stuck as the official term for a “do-over” in golf.

These days, if a shot is egregiously bad, a golfer might write it off as a “mulligan,” place the ball back at its original starting point, and score himself as if the shot never happened (one of my friends refers to her husband’s ex-wife as a “mulligan”). Strictly speaking, mulligans are never allowed, but in friendly games, players sometimes agree in advance that mulligans are permitted. Of course, even when mulligans are not legal nor agreed upon, golfers still take them from time to time, and those illegal mulligans were the focus of our next set of questions.

We asked our participants how likely other golfers are to take illegal mulligans when they could do it without being noticed by the other players. In one version of this question, we asked them about the likelihood of someone taking an illegal mulligan on the first hole. In the second version of the question we asked them about the likelihood of taking an illegal mulligan on the ninth hole.

To be clear, the rules don’t differentiate between these two acts: they are equally prohibited. At the same time, it seems that it is easier to rationalize a do-over on the

first hole than on the ninth hole. If you're on the first hole and you start over, you can pretend that "now I am really starting the game, and from now on every shot will count." But if you are on the ninth hole, there is no way for you to pretend that the game has not yet started. This means that if you take a mulligan you have to admit to yourself that you are simply not counting a shot.

As we would expect based on what we already knew about self-justification from our other experiments, we found a vast difference in the willingness to take mulligans. Our golfers predicted that 40 percent of golfers would take a mulligan on the first hole while (only?) 15 percent of golfers would take a mulligan on the ninth hole.

Fuzzy Reality

In a third set of questions, we asked the golfers to imagine that they shot 6 strokes on a par–5 hole (a hole that good players can complete in 5 strokes). In one version of this question we asked whether the average golfer would write down "5" instead of "6" on his scorecard. In the second version of this question, we asked how likely the average golfer would be to record his score accurately but then, when it comes to adding the scores up, count the 6 as a 5 and thus get the same discount on the score but doing so by adding incorrectly.

We wanted to see whether it would be more easily justifiable to write down the score wrongly to start with, because once the score is written, it is hard to justify adding incorrectly (akin to repositioning a ball by hand). After all, adding incorrectly is an explicit and deliberate act of cheating that cannot be as easily rationalized. That was indeed what we found. Our golfers predicted that in such cases, 15 percent of golfers would write down an improved score, while many fewer (5 percent) would add their score inaccurately.

The great golfer Arnold Palmer once said, "I have a tip that can take five strokes off anyone's golf game. It's called an eraser." It appears, however, that the vast majority of golfers are unwilling to go this route, or at least that they would have an easier time cheating if they did not write the score correctly from the get-go. So here's the timeless "if-a-tree-falls-in-the-forest"-type question: if a golfer shoots a 6 on a par–5 hole, the score is not recorded, and there is no one there to see it—is his score a 6 or a 5?

LYING ABOUT A score in this way has a lot in common with a classic thought experiment called "Schrödinger's cat." Erwin Schrödinger was an Austrian physicist who, in 1935, described the following scenario: A cat is sealed in a steel box with a radioactive isotope that may or may not decay. If it does decay, it will set off a chain of events that will result in the cat's death. If not, the cat will continue living. In Schrödinger's story, as long as the box remains sealed, the cat is suspended between life and death; it cannot be described as either alive or dead. Schrödinger's scenario was intended to critique an interpretation of physics that held that quantum mechanics did not describe objective reality—rather, it dealt only in probability. Leaving the philosophical aspects of physics aside for now, Schrödinger's cat story might serve us well here when thinking about golf scores. A golf score might be a lot like Schrödinger's alive-and-dead cat: until it is written down, it does not really exist

in either form. Only when it's written down does it obtain the status of "objective reality."

YOU MAY BE wondering why we asked participants about "the average golfer" rather than about their own behavior on the course. The reason for this was that we expected that, like most people, our golfers would lie if they were asked directly about their own tendency to behave in unethical ways. By asking them about the behavior of others, we expected that they would feel free to tell the truth without feeling that they are admitting to any bad behavior themselves.*

Still, we also wanted to examine what unethical behaviors golfers would be willing to admit to about their own behavior. What we found was that although many "other golfers" cheat, the particular participants in our study were relative angels: when asked about their own behavior, they admitted to moving the ball with their club in order to improve their lie just 8 percent of the time. Kicking the ball with their shoe was even more rare (just 4 percent of the time), and picking up the ball and moving it occurred only 2.5 percent of the time. Now, 8 percent, 4 percent, and 2.5 percent might still look like big numbers (particularly given the fact that a golf course has 18 holes and many different ways to be dishonest), but they pale in comparison to what "other golfers" do.

We found similar differences in golfers' responses regarding mulligans and scorekeeping. Our participants reported that they would take a mulligan on the first hole only 18 percent of the time and on the ninth hole just 4 percent of the time. They also said that they would write in the wrong score only 4 percent of the time, and barely 1 percent copped to something as egregious as mistallying their scores.

So here's a summary of our results:

Question Type	Question	Tendency to Cheat	
		Other Golfers'	One's Own
Moving the ball	With club	23%	8%
	Kicking	14%	4%
	Picking up	10%	2.5%
Mulligans	On first hole	40%	18%
	On ninth hole	15%	4%
Recording score	Writing wrongly	15%	4%
	Adding wrongly	5%	1%

I am not sure how you want to interpret these differences, but it looks to me as though golfers not only cheat a lot in golf, they also lie about lying.

WHAT HAVE WE learned from this fairway adventure? It seems that cheating in golf captures many of the nuances we discovered about cheating in our laboratory experiments. When our actions are more distant from the execution of the dishonest act, when they are suspended, and when we can more easily rationalize them, golfers —like every other human on the planet—find it easier to be dishonest. It also seems that golfers, like everyone else, have the ability to be dishonest but at the same time think of themselves as honest. And what have we learned about the cheating of businesspeople? Well. When the rules are somewhat open to interpretation, when there are gray areas, and when people are left to score their own performance—even honorable games such as golf can be traps for dishonesty.

CHAPTER 3

Blinded by Our Own Motivations

Picture your next dental appointment. You walk in, exchange pleasantries with the receptionist, and begin leafing through some old magazines while waiting for your name to be called.

Now let's imagine that since your last visit, your dentist went out and bought an innovative and expensive piece of dental equipment. It's a dental CAD/CAM (short for computer-aided design/computer-aided manufacturing) machine, a cutting-edge device used to customize tooth restorations such as crowns and bridges. The device works in two steps. First it displays a 3D replica of the patient's teeth and gums on a computer screen, allowing the dentist to trace the exact shape of the crown—or whatever the restoration—against the screen's image. This is the CAD part. Then comes the CAM part; this device molds ceramic material into a crown according to the dentist's blueprint. Altogether, this fancy machine comes with a hefty price tag.

But let's get back to you. Just as you finish skimming an article about some politician's marital troubles and are about to start a story about the next it-girl, the receptionist calls your name. "Second room to the left," she says.

You situate yourself in the dentist's chair and engage in a bit of small talk with the hygienist, who pokes around your mouth for a while and follows up with a cleaning. Before long, your dentist walks in.

The dentist repeats the same general poking procedure, and as he checks your teeth he tells the hygienist to mark teeth 3 and 4 for further observation and to mark tooth 7 as having craze lines.

"Huh? Caze wha?" you gurgle, with your mouth open wide and the suction tube pulling on the right side of your mouth.

The dentist stops, pulls the instruments out, carefully places them on the tray next to him, and sits back in his chair. He then starts explaining your situation: "Craze lines are what we call certain small cracks in the tooth enamel. But no problem, we have a great solution for this. We'll just use the CAD/CAM to fit you with a crown, problem solved. How about it?" he asks.

You waver a little, but after you get his assurance that it won't hurt one bit, you agree. After all, you have been seeing this dentist for a long time, and although some of his treatments over the years were rather unpleasant, you feel that he has generally treated you well.

Now, I should point out—because your dentist might not—that craze lines are basically very, very small cracks in the enamel of your teeth, and what's more, they're

almost always completely asymptomatic; many people have them and aren't bothered by them in the least. So, in effect, it's usually unnecessary to target craze lines with any kind of treatment.

LET ME GIVE you one real-life story from my friend Jim, the former vice president of a large dental company. Over the years, Jim has encountered his fair share of oddball dental cases, but one CAD/CAM story he told me was particularly horrible.

A few years after the CAD/CAM equipment came onto the market, one particular dentist in Missouri invested in the equipment, and from that point on he seemed to start looking at craze lines differently. "He wanted to crown everything," Jim told me. "He was excited and enthusiastic to use his brand-new gadget, so he recommended that many of his patients improve their smiles, using, of course, his state-of-the-art CAD/CAM equipment."

One of his patients was a young law student with asymptomatic craze lines; still, he recommended that she get a crown. The young woman complied, because she was used to listening to her dentist's advice, but guess what? Because of the crown, her tooth became symptomatic and then died, forcing her to go in for a root canal. But wait, it gets worse. The root canal failed and had to be redone, and that second root canal failed as well. As a result, the woman had no choice but to undergo more complex and painful surgery. So what began as a treatment for harmless craze lines ultimately resulted in a lot of pain and financial cost for this young woman.

After the woman graduated from law school, she did her homework and realized that (surprise!) she'd never needed that crown in the first place. As you can imagine, she wasn't thrilled by this, so she went after the dentist with a vengeance, took him to court, and won.

NOW, WHAT CAN we make of this tale? As we've already learned, people don't need to be corrupt in order to act in problematic and sometimes damaging ways. Perfectly well-meaning people can get tripped up by the quirks of the human mind, make egregious mistakes, and still consider themselves to be good and moral. It's safe to say that most dentists are competent, caring individuals who approach their work with the best of intentions. Yet, as it turns out, biased incentives can—and do—lead even the most upstanding professionals astray.

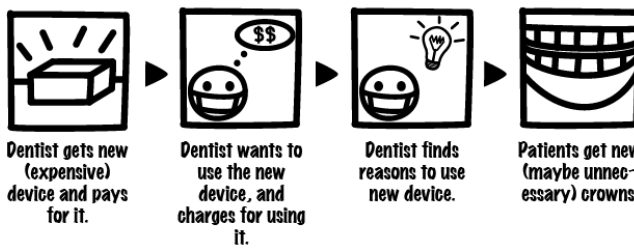
Think about it. When a dentist decides to purchase a new device, he no doubt believes it will help him better serve his patients. But it can also be an expensive venture. He wants to use it to improve patient care, but he also wants to recover his investment by charging his patients for using this wonderful new technology. So, consciously or not, he looks for ways to do so, and voilà! The patient ends up with a crown—sometimes necessary, other times not.

To be clear, I don't think dentists (or the vast majority of people, for that matter) carry out an explicit calculation of costs and benefits by weighing patients' well-being against their own pockets and then deliberately choose their own self-interest over their patients' best interest. Instead, I suspect that some dentists who purchase the CAD/CAM equipment are reacting to the fact that they have invested a great deal of money in the device and want to make the most of it. This information then colors the

dentists' professional judgment, leading them to make recommendations and decisions that are in their own self-interest rather than doing what is best for the patient.

You might think that instances like this, when a service provider is pulled in two directions (generally referred to as a conflict of interest), are rare. But the reality is that conflicts of interest influence our behavior in all kinds of places and, quite frequently, both professionally and personally.

Figure 2: How Conflicts of Interest Can Work on Dentists


$$
Dentist gets new (expensive) device and pays for it.
Dentist wants to use the new device, and charges for using it.
Dentist finds reasons to use new device.
Patients get new (maybe unnec¬essary) crowns.

Can I Tattoo Your Face?

Some time ago I ran smack into a rather strange conflict of interest. In this case I was the patient. As a young man in my midtwenties—about six or seven years after I was originally injured*—I went back to the hospital for a routine checkup. On that particular visit, I met with a few physicians, and they reviewed my case. Later, I met the head of the burn department, who seemed especially happy to see me.

"Dan, I have a fantastic new treatment for you!" he exclaimed. "You see, because you have thick, dark hair, when you shave, no matter how closely you try to shave, there will always be little black dots where your hair grows. But since the right side of your face is scarred, you don't have any facial hair or small black dots on that side, making your face look asymmetrical."

At that point, he launched into a short lecture on the importance of symmetry for aesthetic and social reasons. I knew how important symmetry was to him, because I was given a similar minilecture a few years earlier, when he convinced me to undergo a complex and lengthy operation in which he would take part of my scalp together with its blood supply and re-create the right half of my right eyebrow. (I'd undergone that complex twelve-hour operation and liked the results.)

Then came his proposal: "We have started tattooing little dots resembling stubble onto scarred faces much like yours, and our patients have been incredibly happy with the results."

"That sounds interesting," I said. "Can I talk to one of the patients that had this procedure?"

"Unfortunately you can't—that would violate medical confidentiality," he said. Instead, he showed me pictures of the patients—not of their whole faces, just the parts that were tattooed. And sure enough, it did look as though the scarred faces were covered with black stubblelike specks.

But then I thought of something. “What happens when I grow old and my hair turns gray?” I asked.

“Oh, that’s no problem,” he replied. “When that happens, we’ll just lighten up the tattoo with a laser.” Satisfied, he got up, adding “Come back tomorrow at nine. Just shave the left side of your face as you usually do, with the same closeness of shave that you like to keep, and I’ll tattoo the right side of your face to look the same. I guarantee that by noon, you’ll be happier and more attractive.”

I mulled over the possible treatment on my drive home and for the rest of the day. I also realized that in order to get the full benefit from this treatment, I would have to shave in exactly the same way for the rest of my life. I walked into the department head’s office the next morning and told him that I was not interested in the procedure.

I did not expect what came next. “What is wrong with you?” he growled. “Do you like looking unattractive? Do you derive some kind of strange pleasure from looking asymmetrical? Do women feel sorry for you and give you sympathy sex? I’m offering you a chance to fix yourself in a very simple and elegant way. Why not just take it and be grateful?”

“I don’t know,” I said. “I’m just uncomfortable with the idea. Let me think about it some more.”

You may find it hard to believe that the department head could be so aggressive and harsh, but I assure you this is exactly what he told me. At the same time, it was not his usual manner with me, so I was puzzled by his unrelenting approach. In fact, he was a fantastic, dedicated doctor who treated me well and worked very hard to make me better. It was also not the first time I refused a treatment. Over many years of interacting with medical professionals, I had decided to have some treatments and not others. But none of my doctors, including the head of the burn department, had ever tried to guilt me into having a treatment.

In an attempt to solve this mystery, I went to his deputy, a younger doctor with whom I had a friendly rapport. I asked him to explain why the department head had put me under such pressure.

“Ah, yes, yes,” the deputy said. “He’s already performed this procedure on two patients, and he needs just one more in order to publish a scientific paper in one of the leading medical journals.”

This additional information certainly helped me better understand the conflict of interest I was up against. Here was a really good physician, someone I had known for many years and who had consistently treated me with compassion and great care. Yet, despite the fact that he cared a great deal about me in general, in this instance he was unable to see past his conflict of interest. It goes to show just how hard it is to overcome conflicts of interests once they fundamentally color our view of the world.

After years of experience publishing in academic journals myself, I now have a greater understanding of this physician’s conflict of interest (more about this later). Of course, I’ve never tried to coerce anyone into tattooing his face—but there’s still time for that.

The Hidden Cost of Favors

One other common cause of conflicts of interest is our inherent inclination to return

favors. We humans are deeply social creatures, so when someone lends us a hand in some way or presents us with a gift, we tend to feel indebted. That feeling can in turn color our view, making us more inclined to try to help that person in the future.

One of the most interesting studies on the impact of favors was carried out by Ann Harvey, Ulrich Kirk, George Denfield, and Read Montague (at the time all were at the Baylor College of Medicine). In this study, Ann and her colleagues looked into whether a favor could influence aesthetic preferences.

When participants arrived at the neuroscience lab at Baylor, they were told that they would be evaluating art from two galleries, one called "Third Moon" and another called "Lone Wolfe." The participants were informed that the galleries had generously provided their payment for participating in this experiment. Some were told that their individual payment was sponsored by Third Moon, while the others were told that their individual payment was sponsored by Lone Wolfe.

Armed with this information, the participants moved to the main part of the experiment. One by one, they were asked to remain as motionless as possible in a functional magnetic resonance imagining (fMRI) scanner, a large machine with a cylinder-shaped hole in the middle. Once they were situated inside the massive magnet, they viewed a series of sixty paintings, one at a time. All the paintings were by Western artists dating from the thirteenth through the twentieth century and ranged from representational to abstract art. But the sixty paintings were not all that they saw. Near the top-left corner of each painting was the handsome logo of the gallery where that particular picture could be purchased—which meant that some pictures were presented as if they came from the gallery that sponsored the participant, and some pictures were presented as if they came from the nonsponsoring gallery.

Once the scanning portion of the experiment was over, each participant was asked to take another look at each of the painting-logo combinations, but this time they were asked to rate each of the pictures on a scale that ranged from "dislike" to "like."

With the rating information in hand, Ann and her colleagues could compare which paintings the participants liked more, the ones from Third Moon or the ones from Lone Wolfe. As you might suspect, when the researchers examined the ratings they found that participants gave more favorable ratings to the paintings that came from their sponsoring gallery.

You might think that this preference for the sponsoring gallery was due to a kind of politeness—or maybe just lip service, the way we compliment friends who invite us for dinner even when the food is mediocre. This is where the fMRI part of the study came in handy. Suggesting that the effects of reciprocity run deep, the brain scans showed the same effect; the presence of the sponsor's logo increased the activity in the parts of the participants' brains that are related to pleasure (particularly the ventromedial prefrontal cortex, a part of the brain that is responsible for higher-order thinking, including associations and meaning). This suggested that the favor from the sponsoring gallery had a deep effect on how people responded to the art. And get this: when participants were asked if they thought that the sponsor's logo had any effect on their art preferences, the universal answer was "No way, absolutely not."

What's more, different participants were given varying amounts of money for their time in the experiments. Some received $30 from their sponsoring gallery, others

received $100. At the highest level, participants were paid $300. It turned out that the favoritism toward the sponsoring gallery increased as the amount of earnings grew. The magnitude of brain activation in the pleasure centers of the brain was lowest when the payment was $30, higher when the payment was $100, and highest when the payment was $300.

These results suggest that once someone (or some organization) does us a favor, we become partial to anything related to the giving party—and that the magnitude of this bias increases as the magnitude of the initial favor (in this case the amount of payment) increases. It's particularly interesting that financial favors could have an influence on one's preferences for art, especially considering that the favor (paying for their participation in the study) had nothing at all to do with the art, which had been created independently of the galleries. It is also interesting to note that participants knew the gallery would pay their compensation regardless of their ratings of the paintings and yet the payment (and its magnitude) established a sense of reciprocity that guided their preferences.

Fun with Pharma

Some people and companies understand this human propensity for reciprocity very well and consequently spend a lot of time and money trying to engender a feeling of obligation in others. To my mind, the profession that most embodies this type of operation, that is, the one that depends most on creating conflicts of interests, is—of course—that of governmental lobbyists, who spend a small fraction of their time informing politicians about facts as reported by their employers and the rest of their time trying to implant a feeling of obligation and reciprocity in politicians who they hope will repay them by voting with their interest in mind.

But lobbyists are not alone in their relentless pursuit of conflicts of interest, and some other professions could arguably give them a run for their well-apportioned money. For example, let's consider the way representatives for drug companies (pharma reps) run their business. A pharma rep's job is to visit doctors and convince them to purchase medical equipment and drugs to treat everything from A(sthma)to Z(ollinger-Ellison syndrome). First they may give a doctor a free pen with their logo, or perhaps a notepad, a mug, or maybe some free drug samples. Those small gifts can subtly influence physicians to prescribe a drug more often—all because they feel the need to give back.[1]

But small gifts and free drug samples are just a few of the many psychological tricks that pharma reps use as they set out to woo physicians. "They think of everything," my friend and colleague (let's call him MD) told me. He went on to explain that drug companies, especially smaller ones, train their reps to treat doctors as if they were gods. And they seem to have a disproportionately large reserve of attractive reps. The whole effort is coordinated with military precision. Every self-respecting rep has access to a database that tells them exactly what each doctor has prescribed over the last quarter (both that company's drugs as well as their competitors'). The reps also make it their business to know what kind of food each doctor and their office staff likes, what time of day they are most likely to see reps, and also which type of rep gets the most face time with the doctors. If the doctor is

noted to spend more time with a certain female rep, they may adjust that rep's rotation so that she can spend more time in that office. If the doctor is a fan of the military, they'll send him a veteran. The reps also make it a point to be agreeable with the doctor's outer circles, so when the rep arrives they start by handing out candy and other small gifts to the nurses and the front desk, securing themselves in everyone's good graces from the get-go.

One particularly interesting practice is the "dine-and-dash," where, in the name of education, doctors can simply pull up at prespecified take-out restaurants and pick up whatever they want. Even medical students and trainees are pulled into some schemes. One particularly creative example of this strategy was the famous black mug. A black mug with the company's logo was handed out to doctors and residents, and the company arranged it such that a doctor could take this mug to any location of a local coffee chain (which shall go unnamed) and get as much espresso or cappuccino as he or she wanted. The clamor for this mug was so great that it became a status symbol among students and trainees. As these practices became more extravagant, there was also more regulation from hospitals and the American Medical Association, limiting the use of these aggressive marketing tactics. Of course, as the regulations become more stringent, pharma reps continue to search for new and innovative approaches to influence physicians. And the arms race continues . . .*

A FEW YEARS AGO, my colleague Janet Schwartz (a professor at Tulane University) and I invited some pharmaceutical reps to dinner. We basically tried the pharma reps at their own game; we took them to a nice restaurant and kept the wine flowing. Once we had them feeling happily lubricated, they were ready to tell us the tricks of their trade. And what we learned was fairly shocking.

Picture one of those pharma reps, an attractive, charming man in his early twenties. Not the kind of guy who would have any trouble finding a date. He told us how he had once persuaded a reluctant female physician to attend an informational seminar about a medication he was promoting—by agreeing to escort her to a ballroom dancing class. It was an unstated quid pro quo: the rep did a personal favor for the doctor, and the doctor took his free drug samples and promoted the product to her patients.

Another common practice, the reps told us, was to take fancy meals to the entire doctor's office (one of the perks of being a nurse or receptionist, I suppose). One doctor's office even required alternating days of steak and lobster for lunch if the reps wanted access to the doctors. Even more shocking, we found out that physicians sometimes called the reps into the examination room (as an "expert") to directly inform patients about the way certain drugs work.

Hearing stories from the reps who sold medical devices was even more disturbing. We learned that it's common practice for device reps to peddle their medical devices in the operating room in real time and while a surgery is under way.

Janet and I were surprised at how well the pharmaceutical reps understood classic psychological persuasion strategies and how they employed them in a sophisticated and intuitive manner. Another clever tactic that they told us about involved hiring physicians to give a brief lecture to other doctors about a drug they were trying to promote. Now, the pharma reps really didn't care about what the audience took from

the lecture—what they were actually interested in was the effect that giving the lecture had on the speaker. They found that after giving a short lecture about the benefits of a certain drug, the speaker would begin to believe his own words and soon prescribe accordingly. Psychological studies show that we quickly and easily start believing whatever comes out of our own mouths, even when the original reason for expressing the opinion is no longer relevant (in the doctors' case, that they were paid to say it). This is cognitive dissonance at play; doctors reason that if they are telling others about a drug, it must be good—and so their own beliefs change to correspond to their speech, and they start prescribing accordingly.

The reps told us that they employed other tricks too, turning into chameleons—switching various accents, personalities, and political affiliations on and off. They prided themselves on their ability to put doctors at ease. Sometimes a collegial relationship expanded into the territory of social friendship—some reps would go deep-sea fishing or play basketball with the doctors as friends. Such shared experiences allowed the physicians to more happily write prescriptions that benefited their "buddies." The physicians, of course, did not see that they were compromising their values when they were out fishing or shooting hoops with the drug reps; they were just taking a well-deserved break with a friend with whom they just happened to do business. Of course, in many cases the doctors probably didn't realize that they were being manipulated—but there is no doubt that they were.

DISGUISED FAVORS ARE one thing, but there are many cases when conflicts of interest are more easily recognizable. Sometimes a drug maker pays a doctor thousands of dollars in consulting fees. Sometimes the company donates a building or gives an endowment to a medical researcher's department in the hope of influencing his views. This type of action creates immense conflicts of interest—especially at medical schools, where pharmaceutical bias can be passed from the medical professor to medical students and along to patients.

Duff Wilson, a reporter for *The New York Times*, described one example of this type of behavior. A few years ago, a Harvard Medical School student noticed that his pharmacology professor was heavily promoting the benefits of cholesterol drugs and downplaying their side effects. When the student did some googling, he discovered that the professor was on the payroll of ten drug companies, five of which made cholesterol drugs. And the professor wasn't alone. As Wilson put it, "Under the school's disclosure rules, about 1,600 of 8,900 professors and lecturers at Harvard Medical School have reported to the dean that they or a family member had a financial interest in a business related to their teaching, research, or clinical care."[2] When professors publicly pass drug recommendations off as academic knowledge, we have a serious problem.

Fudging the Numbers

If you think that the world of medicine is rife with conflicts of interest, let's consider another profession in which these conflicts may be even more widespread. Yes, I'm talking about the wonderland of financial services.

Say it's 2007, and you've just accepted a fantastic banking job on Wall Street. Your

bonus could be in the neighborhood of $5 million a year, but only if you view mortgage-backed securities (or some other new financial instrument) in a positive light. You're being paid a lot of money to maintain a distorted view of reality, but you don't notice the tricks that your big bonus plays on your perception of reality. Instead, you are quickly convinced that mortgage-backed securities are every bit as solid as you want to believe they are.

Once you've accepted that mortgage-backed securities are the wave of the future, you're at least partially blind to their risks. On top of that, it's notoriously hard to evaluate how much securities are really worth. As you sit there with your large and complex Excel spreadsheet full of parameters and equations, you try to figure out the real value of the securities. You change one of the discount parameters from 0.934 to 0.936, and right off the bat you see how the value of the securities jumps up. You continue to play around with the numbers, searching for parameters that provide the best representation of "reality," but with one eye you also see the consequences of your parameter choices for your personal financial future. You continue to play with the numbers for a while longer, until you are convinced that the numbers truly represent the ideal way to evaluate mortgage-backed securities. You don't feel bad because you are certain that you have done your best to represent the values of the securities as objectively as possible.

Moreover, you aren't dealing with real cash; you are only playing with numbers that are many steps removed from cash. Their abstractness allows you to view your actions more as a game, and not as something that actually affects people's homes, livelihoods, and retirement accounts. You are also not alone. You realize that the smart financial engineers in the offices next to yours are behaving more or less the same way as you and when you compare your evaluations to theirs, you realize that a few of your coworkers have chosen even more extreme values than yours. Believing that you are a rational creature, and believing that the market is always correct, you are even more inclined to accept what you're doing—and what everyone else is doing (we'll learn more about this in chapter 8)—as the right way to go. Right?

Of course, none of this is actually okay (remember the financial crisis of 2008?), but given the amount of money involved, it feels natural to fudge things a bit. And it's perfectly human to behave this way. Your actions are highly problematic, but you don't see them as such. After all, your conflicts of interest are supported by the facts that you're not dealing with real money; that the financial instruments are mind-bogglingly complex; and that every one of your colleagues is doing the same thing.

The riveting (and awfully distressing) Academy Award–winning documentary *Inside Job* shows in detail how the financial services industry corrupted the U.S. government, leading to a lack of oversight on Wall Street and to the financial meltdown of 2008. The film also describes how the financial services industry paid leading academics (deans, heads of departments, university professors) to write expert reports in the service of the financial industry and Wall Street. If you watch the film, you will most likely feel puzzled by the ease with which academic experts seemed to sell out, and think that you would never do the same.

But before you put a guarantee on your own standards of morality, imagine that I (or you) were paid a great deal to be on Giantbank's audit committee. With a large part of my income depending on Giantbank's success, I would probably not be as

critical as I am currently about the bank's actions. With a hefty enough incentive I might not, for example, repeatedly say that investments must be transparent and clear and that companies need to work hard to try to overcome their conflicts of interests. Of course, I've yet to be on such a committee, so for now it's easy for me to think that many of the actions of the banks have been reprehensible.

Academics Are Conflicted Too

When I reflect on the ubiquity of conflicts of interest and how impossible they are to recognize in our own lives, I have to acknowledge that I'm susceptible to them as well.

We academics are sometimes called upon to use our knowledge as consultants and expert witnesses. Shortly after I got my first academic job, I was invited by a large law firm to be an expert witness. I knew that some of my more established colleagues provided expert testimonials as a regular side job for which they were paid handsomely (though they all insisted that they didn't do it for the money). Out of curiosity, I asked to see the transcripts of some of their old cases, and when they showed me a few I was surprised to discover how one-sided their use of the research findings was. I was also somewhat shocked to see how derogatory they were in their reports about the opinions and qualifications of the expert witnesses representing the other side—who in most cases were also respectable academics.

Even so, I decided to try it out (not for the money, of course), and I was paid quite a bit to give my expert opinion.* Very early in the case I realized that the lawyers I was working with were trying to plant ideas in my mind that would buttress their case. They did not do it forcefully or by saying that certain things would be good for their clients. Instead, they asked me to describe all the research that was relevant to the case. They suggested that some of the less favorable findings for their position might have some methodological flaws and that the research supporting their view was very important and well done. They also paid me warm compliments each time that I interpreted research in a way that was useful to them. After a few weeks, I discovered that I rather quickly adopted the viewpoint of those who were paying me. The whole experience made me doubt whether it's at all possible to be objective when one is paid for his or her opinion. (And now that I am writing about my lack of objectivity, I am sure that no one will ever ask me to be an expert witness again—and maybe that's a good thing.)

The Drunk Man and the Data Point

I had one other experience that made me realize the dangers of conflicts of interest; this time it was in my own research. At the time, my friends at Harvard were kind enough to let me use their behavioral lab to conduct experiments. I was particularly interested in using their facility because they recruited residents from the surrounding area rather than relying only on students.

One particular week, I was testing an experiment on decision making, and, as is usually the case, I predicted that the performance level in one of the conditions would be much higher than the performance level in the other condition. That was basically what the results showed—aside from one person. This person was in the condition I

expected to perform best, but his performance was much worse than everyone else's. It was very annoying. As I examined his data more closely, I discovered that he was about twenty years older than everyone else in the study. I also remembered that there was one older fellow who was incredibly drunk when he came to the lab.

The moment I discovered that the offending participant was drunk, I realized that I should have excluded his data in the first place, given that his decision-making ability was clearly compromised. So I threw out his data, and instantly the results looked beautiful—showing exactly what I expected them to show. But, a few days later I began thinking about the process by which I decided to eliminate the drunk guy. I asked myself: what would have happened if this fellow had been in the other condition—the one I expected to do worse? If that had been the case, I probably would not have noticed his individual responses to start with. And if I had, I probably would not have even considered excluding his data.

In the aftermath of the experiment, I could easily have told myself a story that would excuse me from using the drunk guy's data. But what if he hadn't been drunk? What if he had some other kind of impairment that had nothing to do with drinking? Would I have invented another excuse or logical argument to justify excluding his data? As we will see in chapter 7, "Creativity and Dishonesty," creativity can help us justify following our selfish motives while still thinking of ourselves as honest people.

I decided to do two things. First, I reran the experiment to double-check the results, which worked out beautifully. Then I decided it was okay to create standards for excluding participants from an experiment (that is, we wouldn't test drunks or people who couldn't understand the instructions). But the rules for exclusion have to be made up front, before the experiment takes place, and definitely not after looking at the data.

What did I learn? When I was deciding to exclude the drunk man's data, I honestly believed I was doing so in the name of science—as if I were heroically fighting to clear the data so that the truth could emerge. It didn't occur to me that I might be doing it for my own self-interest, but I clearly had another motivation: to find the results I was expecting. More generally, I learned—again—about the importance of establishing rules that can safeguard ourselves from ourselves.

Disclosure: A Panacea?

So what is the best way to deal with conflicts of interest? For most people, "full disclosure" springs to mind. Following the same logic as "sunshine policies," the basic assumption underlying disclosure is that as long as people publicly declare exactly what they are doing, all will be well. If professionals were to simply make their incentives clear and known to their clients, so the thinking goes, the clients can then decide for themselves how much to rely on their (biased) advice and then make more informed decisions.

If full disclosure were the rule of the land, doctors would inform their patients when they own the equipment required for the treatments they recommend. Or when they are paid to consult for the manufacturer of the drugs that they are about to prescribe. Financial advisers would inform their clients about all the different fees, payments, and commissions they get from various vendors and investment houses.

With that information in hand, consumers should be able to appropriately discount the opinions of those professionals and make better decisions. In theory, disclosure seems to be a fantastic solution; it both exonerates the professionals who are acknowledging their conflicts of interest and it provides their clients with a better sense of where their information is coming from.

HOWEVER, IT TURNS out that disclosure is not always an effective cure for conflicts of interest. In fact, disclosure can sometimes make things worse. To explain how, allow me to run you through a study conducted by Daylian Cain (a professor at Yale University), George Loewenstein (a professor at Carnegie Mellon University), and Don Moore (a professor at the University of California, Berkeley). In this experiment, participants played a game in one of two roles. (By the way, what researchers call a "game" is not what any reasonable kid would consider a game.) Some of the participants played the role of estimators: their task was to guess the total amount of money in a large jar full of loose change as accurately as possible. These players were paid according to how close their guess was to the real value of the money in the jar. The closer their estimates were, the more money they received, and it didn't matter if they missed by overestimating or underestimating the true value.

The other participants played the role of advisers, and their task was to advise the estimators on their guesses. (Think of someone akin to your stock adviser, but with a much simpler task.) There were two interesting differences between the estimators and the advisers. The first was that whereas the estimators were shown the jar from a distance for a few seconds, the advisers had more time to examine it, and they were also told that the amount of money in the jar was between $10 and $30. That gave the advisers an informational edge. It made them relative experts in the field of estimating the jar's value, and it gave the estimators a very good reason to rely on their advisers' reports when formulating their guesses (comparable to the way we rely on experts in many areas of life).

The second difference concerned the rule for paying the advisers. In the control condition, the advisers were paid according to the accuracy of the estimators' guesses, so no conflicts of interest were involved. In the conflict-of-interest condition, the advisers were paid more as the estimators overguessed the value of the coins in the jar to a larger degree. So if the estimators overguessed by $1, it was good for the advisers—but it was even better if they overguessed by $3 or $4. The higher the overestimation, the less the estimator made but the more the adviser pocketed.

So what happened in the control condition and in the conflict-of-interest condition? You guessed it: in the control condition, advisers suggested an average value of $16.50, while in the conflict-of-interest condition, the advisers suggested an estimate that was over $20. They basically goosed the estimated value by almost $4. Now, you can look at the positive side of this result and tell yourself, "Well, at least the advice was not $36 or some other very high number." But if that is what went through your mind, you should consider two things: first, that the adviser could not give clearly exaggerated advice because, after all, the estimator did see the jar. If the value had been dramatically too high, the estimator would have dismissed the suggestion altogether. Second, remember that most people cheat just enough to still feel good about themselves. In that sense, the fudge factor was an extra $4 (or about

25 percent of the amount).

The importance of this experiment, however, showed up in the third condition—the conflict-of-interest-plus-disclosure condition. Here the payment for the adviser was the same as it was in the conflict-of-interest condition. But this time the adviser had to tell the estimator that he or she (the adviser) would receive more money when the estimator overguessed. The sunshine policy in action! That way, the estimator could presumably take the adviser's biased incentives into account and discount the advice of the adviser appropriately. Such a discount of the advice would certainly help the estimator, but what about the effect of the disclosure on the advisers? Would the need to disclose eliminate their biased advice? Would disclosing their bias stretch the fudge factor? Would they now feel more comfortable exaggerating their advice to an even greater degree? And the billion-dollar question is this: which of these two effects would prove to be larger? Would the discount that the estimator applied to the adviser's advice be smaller or larger than the extra exaggeration of the adviser?

The results? In the conflict-of-interest-plus-disclosure condition, the advisers increased their estimates by another $4 (from $20.16 to $24.16). And what did the estimators do? As you can probably guess, they did discount the estimates, but only by $2. In other words, although the estimators did take the advisers' disclosure into consideration when formulating their estimates, they didn't subtract nearly enough. Like the rest of us, the estimators didn't sufficiently recognize the extent and power of their advisers' conflicts of interest.

The main takeaway is this: disclosure created even greater bias in advice. With disclosure the estimators made less money and the advisers made more. Now, I am not sure that disclosure will always make things worse for clients, but it is clear that disclosure and sunshine policies will not always make things better.

So What Should We Do?

Now that we understand conflicts of interest a bit better, it should be clear what serious problems they cause. Not only are they ubiquitous, but we don't seem to fully appreciate their degree of influence on ourselves and on others. So where do we go from here?

One straightforward recommendation is to try to eradicate conflicts of interest altogether, which of course is easier said than done. In the medical domain, that would mean, for example, that we would not allow doctors to treat or test their own patients using equipment that they own. Instead, we'd have to require that an independent entity, with no ties to the doctors or equipment companies, conduct the treatments and tests. We would also prohibit doctors from consulting for drug companies or investing in pharmaceutical stocks. After all, if we don't want doctors to have conflicts of interest, we need to make sure that their income doesn't depend on the number and types of procedures or prescriptions they recommend. Similarly, if we want to eliminate conflicts of interest for financial advisers, we should not allow them to have incentives that are not aligned with their clients' best interests—no fees for services, no kickbacks, and no differential pay for success and failure.

Though it is clearly important to try to reduce conflicts of interest, it is not easy to do so. Take contractors, lawyers, and car mechanics, for example. The way these

professionals are paid puts them into terrible conflicts of interest because they both make the recommendation and benefit from the service, while the client has no expertise or leverage. But stop for a few minutes and try to think about a compensation model that would not involve any conflicts of interest. If you are taking the time to try to come up with such an approach, you most likely agree that it is very hard—if not impossible—to pull off. It is also important to realize that although conflicts of interest cause problems, they sometimes happen for good reason. Take the case of physicians (and dentists) ordering treatments that use equipment they own. Although this is a potentially dangerous practice from the perspective of conflicts of interest, it also has some built-in advantages: professionals are more likely to purchase equipment that they believe in; they are likely to become experts in using it; it can be much more convenient for the patient; and the doctors might even conduct some research that could help improve the equipment or the ways in which it is used.

The bottom line is that it is no easy task to come up with compensation systems that don't inherently involve—and sometimes rely on—conflicts of interest. Even if we could eliminate all conflicts of interest, the cost of doing so in terms of decreased flexibility and increased bureaucracy and oversight might not be worth it—which is why we should not overzealously advocate draconian rules and restrictions (say, that physicians can never talk to pharma reps or own medical equipment). At the same time, I do think it's important for us to realize the extent to which we can all be blinded by our financial motivations. We need to acknowledge that situations involving conflicts of interest have substantial disadvantages and attempt to thoughtfully reduce them when their costs are likely to outweigh their benefits.

As you might expect, there are many straightforward instances where conflicts of interest should simply be eliminated. For example, the conflicts for financial advisers who receive side payments, auditors who serve as consultants to the same firms, financial professionals who are paid handsome bonuses when their clients make money but lose nothing when their clients lose their shirts, rating agencies that are paid by the companies they rate, and politicians who accept money and favors from corporations and lobbyists in exchange for their votes; in all of these cases it seems to me that we must do our best to eradicate as many conflicts of interest as possible—most likely by regulation.

You're probably skeptical that regulation of this sort could ever happen. When regulation by the government or by professional organizations does not materialize, we as consumers should recognize the danger that conflicts of interest bring with them and do our best to seek service providers who have fewer conflicts of interest (or, if possible, none). Through the power of our wallets we can push service providers to meet a demand for reduced conflicts of interest.

Finally, when we face serious decisions in which we realize that the person giving us advice may be biased—such as when a physician offers to tattoo our faces—we should spend just a little extra time and energy to seek a second opinion from a party that has no financial stake in the decision at hand.

CHAPTER 4

Why We Blow It When We're Tired

Imagine yourself at the end of a really long, hard day. Let's say it's the most exhausting of days: moving day. You're completely exhausted. Even your hair feels tired. Cooking is certainly out of the question. You don't even have the energy to locate a pan, plate, and fork, much less put them to use. Clearly it's going to be a take-out night.

Within a block of your new place are three restaurants. One is a little bistro with fresh salads and paninis. Another is a Chinese place; the greasy, salty smells emanating from within make the back of your mouth tingle. There's also a cute mom-and-pop pizzeria where the locals enjoy cheesy slices twice the size of their faces. To which restaurant do you drag your tired, aching body? Which kind of cuisine would you prefer to enjoy on your new floor? By contrast, consider what your choice might be if the meal were after an afternoon spent relaxing in the backyard with a good book.

In case you haven't noticed, on stressful days many of us give in to temptation and choose one of the less healthy alternatives. Chinese takeout and pizza are practically synonymous with moving day, conjuring up an image of a young, attractive, tired, but happy couple surrounded by cardboard boxes and eating chow mein out of the box with chopsticks. And we all remember the times college friends offered us pizza and beer in exchange for helping them move.

This mysterious connection between exhaustion and the consumption of junk food is not just a figment of your imagination. And it is the reason why so many diets die on the chopping block of stress and why people start smoking again after a crisis.

Let Us Eat Cake

The key to this mystery has to do with the struggle between the impulsive (or emotional) and the rational (or deliberative) parts of ourselves. This is not a new idea; many seminal books (and academic papers) throughout history have had something to say about the conflicts between desire and reason. We have Adam and Eve, tempted by the prospect of forbidden knowledge and that succulent fruit. There was Odysseus, who knew he'd be lured by the Sirens' song and cleverly ordered his crew to tie him to the mast and fill their ears with wax to muffle the tantalizing call (that way, Odysseus could have it both ways—he could hear the song without worrying that the men would wreck the ship). And in one of the most tragic struggles between emotion

and reason, Shakespeare's Romeo and Juliet fell hard for each other, despite Friar Laurence's warning that untamed passion only brings disaster.

In a fascinating demonstration of the tension between reason and desire, Baba Shiv (a professor at Stanford University) and Sasha Fedorikhin (a professor at Indiana University) examined the idea that people fall into temptation more frequently when the part of their brain that is in charge of deliberative thinking is otherwise occupied. To reduce participants' ability to think effectively, Baba and Sasha did not remove parts of their brains (as animal researchers sometimes do), nor did they use magnetic pulses to disrupt thinking (though there are machines that can do that). Instead, they decided to tax their participants' ability to think by piling on what psychologists call cognitive load. Simply put, they wanted to find out whether having a lot on one's mind would leave less cognitive room for resisting temptation and make people more likely to succumb to it.

Baba and Sasha's experiment went like this: they divided participants into two groups and asked members of one group to remember a two-digit number (something like, say, 35) and they asked members of the other group to remember a seven-digit number (say, 7581280). The participants were told that in order to get their payment for the experiment, they would have to repeat the number to another experimenter who was waiting for them in a second room at the other end of the corridor. And if they didn't remember the number? No reward.

The participants lined up to take part in the experiment and were briefly shown either the two-digit number or the seven-digit number. With their numbers in mind, they each walked down the hall to the second room where they would be asked to recall the number. But on the way, they unexpectedly passed by a cart displaying pieces of rich, dark chocolate cake and bowls of colorful, healthy-looking fruit. As participants passed the cart, another experimenter told them that once they got to the second room and recited their number they could have one of the two snacks—but they had to make their decision right then, at the cart. The participants made their choice, received a slip of paper indicating their chosen snack, and off they went to the second room.

What decisions did participants make while laboring under more and less cognitive strain? Did the "Yum, cake!" impulse win the day, or did they select the healthy fruit salad (the well-reasoned choice)? As Baba and Sasha suspected, the answer depended in part on whether the participants were thinking about an easy-to-remember number or a hard one. Those breezing down the hall with a mere "35" on their minds chose the fruit much more frequently than those struggling with "7581280." With their higher-level faculties preoccupied, the seven-digit group was less able to overturn their instinctive desires, and many of them ended up succumbing to the instantly gratifying chocolate cake.

The Tired Brain

Baba and Sasha's experiment showed that when our deliberative reasoning ability is occupied, the impulsive system gains more control over our behavior. But the interplay between our ability to reason and our desires gets even more complicated when we think about what Roy Baumeister (a professor at Florida State University)

coined “ego depletion.”

To understand ego depletion, imagine that you’re trying to lose a few extra pounds. One day at work, you are eyeing a cheese danish at the morning meeting, but you’re trying to be good, so you work very hard to resist the temptation and just sip your coffee instead. Later that day, you are craving fettuccine alfredo for lunch but you force yourself to order a garden salad with grilled chicken. An hour later, you want to knock off a little early since your boss is out, but you stop yourself and say, “No, I must finish this project.” In each of these instances your hedonic instincts prompt you toward pleasurable types of gratification, while your laudable self-control (or willpower) applies opposing force in an attempt to counteract these urges.

The basic idea behind ego depletion is that resisting temptation takes considerable effort and energy. Think of your willpower as a muscle. When we see fried chicken or a chocolate milkshake, our first reaction is an instinctive “Yum, want!” Then, as we try to overcome the desire, we expend a bit of energy. Each of the decisions we make to avoid temptation takes some degree of effort (like lifting a weight once), and we exhaust our willpower by using it over and over (like lifting a weight over and over). This means that after a long day of saying “no” to various and sundry temptations, our capacity for resisting them diminishes—until at some point we surrender and end up with a belly full of cheese danish, Oreos, french fries, or whatever it is that makes us salivate. This, of course, is a worrisome thought. After all, our days are increasingly full of decisions, along with a never-ending barrage of temptations. If our repeated attempts to control ourselves deplete our ability to do so, is it any wonder that we so often fail? Ego depletion also helps explain why our evenings are particularly filled with failed attempts at self-control—after a long day of working hard to be good, we get tired of it all. And as night falls, we are particularly likely to succumb to our desires (think of late-night snacking as the culmination of a day’s worth of resisting temptation).

WHEN JUDGES GET TIRED

In case you’ve got a parole hearing coming up, make sure it’s first thing in the morning or right after lunchtime. Why? According to a study by Shai Danziger (a professor at Tel Aviv University), Jonathan Levav (a professor at Stanford University), and Liora Avnaim-Pesso (a professor at Ben-Gurion University of the Negev), judges on parole boards tend to grant parole more frequently when they are most refreshed. Investigating a large set of parole rulings in Israel, the researchers found that parole boards were more likely to grant parole during their first cases of the day and just after their lunch breaks. Why? The default decision of parole boards is not to grant parole. But it seems that when the judges felt rejuvenated, which was first thing in the morning or after just having eaten and taken a break, they had an increased ability to override their standard decision, make a more effortful decision, and grant parole more frequently. But over the many difficult decisions of the day, as their cognitive burden was building up, they opted

for the simpler, default decision of not granting parole.

I think that PhD students (a slightly different sort of prisoner) instinctively understand this mechanism, which is why they often bring doughnuts, muffins, and cookies to their dissertation proposals and defenses. Based on the results of the parole study, it is likely that their judges are more likely to grant them academic parole and let them start their own independent lives.

Testing the Moral Muscle

In the TV series *Sex and the City*, Samantha Jones (the blondest and most salacious one, for those not in the know) finds herself in a committed relationship. She begins eating compulsively and consequently gains weight. What's interesting is the reason behind this baffling behavior. Samantha notices that her eating compulsion started when a good-looking man moved in next door—just the kind of man she would have gone after when she was single. She realizes that she's using food as a bulwark against temptation: "I eat so I don't cheat," she explains to her friends. Fictional Samantha is depleted, just like a real person. She can't resist all temptation, so she compromises by falling for food instead of promiscuity.

Sex and the City is no cinematic or psychological masterpiece, but it poses an interesting question: Might people who overtax themselves in one domain end up being less moral in others? Does depletion lead us to cheat? That is what Nicole Mead (a professor at Católica-Lisbon), Roy Baumeister, Francesca Gino, Maurice Schweitzer (a professor at the University of Pennsylvania), and I decided to check out. What would happen to real-life Samanthas who were depleted by one task and then given an opportunity to cheat on another? Would they cheat more? Less? Would they predict that they are more likely to succumb to temptation and therefore try to avoid the tempting situation altogether?

Our first experiment included several steps. First, we split our participants into two groups. We asked one group to write a short essay about what they had done the previous day without using the letters "x" and "z." To get a feeling for this task, try it yourself: Take out a piece of paper, and in five or six lines, write a short synopsis of one of your favorite books, but don't use the letters "x" and "z." Note: you cannot simply omit the letters from the words—you must use words that do not contain an "x" or "z" (e.g., "bicycle").

We called this the nondepleting condition because, as you can tell, it's pretty easy to write an essay without using the letters "x" and "z."

We asked the other group to do the same thing but told them not to use the letters "a" and "n." To get a better grasp of how this version of the task is different, on another piece of paper, try writing a short synopsis of one of your favorite movies while not using any words that contain the letters "a" and "n."

As you probably discovered from your experience with the second task, trying to tell a story without using "a" and "n" required our storytellers to constantly repress the words that naturally popped into their minds. You can't write that the characters

"went for a walk in the park" or "ran into each other at a restaurant."

All of those little acts of repression add up to greater depletion.

Once our participants turned in their essays, we asked them to perform a separate task for a different study, which was the main focus of this experiment. The other task was our standard matrix test.

How did things turn out? In the two control conditions, we found that both the depleted and nondepleted folks showed an equal ability to solve the math problems—which means that depletion did not diminish their basic ability to do the math. But in the two shredder conditions (in which they could cheat), things went differently. Those who wrote essays without the letters "x" and "z" and later shredded their answers indulged in a little bit of cheating, claiming to solve about one extra matrix correctly. But the participants in the shredder condition who'd undergone the ordeal of writing essays without the letters "a" and "n" took the proverbial cake: they claimed to have correctly solved about three extra matrices. As it turned out, the more taxing and depleting the task, the more participants cheated.

What do these findings suggest? Generally speaking, if you wear down your willpower, you will have considerably more trouble regulating your desires, and that difficulty can wear down your honesty as well.

Dead Grannies

Over the course of many years of teaching, I've noticed that there typically seems to be a rash of deaths among students' relatives at the end of the semester, and it happens mostly in the week before final exams and before papers are due. In an average semester, about 10 percent of my students come to me asking for an extension because someone has died—usually a grandmother. Of course I find it very sad and am always ready to sympathize with my students and give them more time to complete their assignments. But the question remains: what is it about the weeks before finals that is so dangerous to students' relatives?

Most professors encounter the same puzzling phenomenon, and I'll guess that we have come to suspect some kind of causal relationship between exams and sudden deaths among grandmothers. In fact, one intrepid researcher has successfully proven it. After collecting data over several years, Mike Adams (a professor of biology at Eastern Connecticut State University) has shown that grandmothers are ten times more likely to die before a midterm and nineteen times more likely to die before a final exam. Moreover, grandmothers of students who aren't doing so well in class are at even higher risk—students who are failing are fifty times more likely to lose a grandmother compared with nonfailing students.

In a paper exploring this sad connection, Adams speculates that the phenomenon is due to intrafamilial dynamics, which is to say, students' grandmothers care so much about their grandchildren that they worry themselves to death over the outcome of exams. This would indeed explain why fatalities occur more frequently as the stakes rise, especially in cases where a student's academic future is in peril. With this finding in mind, it is rather clear that from a public policy perspective, grandmothers—particularly those of failing students—should be closely monitored for signs of ill health during the weeks before and during finals. Another recommendation is that

their grandchildren, again particularly the ones who are not doing well in class, should not tell their grandmothers anything about the timing of the exams or how they are performing in class.

Though it is likely that intrafamilial dynamics cause this tragic turn of events, there is another possible explanation for the plague that seems to strike grandmothers twice a year. It may have something to do with students' lack of preparation and their subsequent scramble to buy more time than with any real threat to the safety of those dear old women. If that is the case, we might want to ask why it is that students become so susceptible to "losing" their grandmothers (in e-mails to professors) at semesters' end.

Perhaps at the end of the semester, the students become so depleted by the months of studying and burning the candle at both ends that they lose some of their morality and in the process also show disregard for their grandmothers' lives. If the concentration it takes to remember a longer digit can send people running for chocolate cake, it's not hard to imagine how dealing with months of cumulative material from several classes might lead students to fake a dead grandmother in order to ease the pressure (not that that's an excuse for lying to one's professors).

Just the same, to all grandmothers out there: take care of yourselves at finals time.

Red, Green, and Blue

We've learned that depletion takes away some of our reasoning powers and with them our ability to act morally.

Still, in real life we can choose to remove ourselves from situations that might tempt us to behave immorally. If we are even somewhat aware of our propensity to act dishonestly when depleted, we can take this into account and avoid temptation altogether. (For example, in the domain of dieting, avoiding temptation could mean that we decide not to shop for groceries when we're starving.)

In our next experiment, our participants could choose whether or not to put themselves into a position that would tempt them to cheat in the first place. Once again, we wanted to create two groups: one depleted, the other not. This time, however, we used a different method of mental exhaustion called the Stroop task.

In this task, we presented participants with a table of color names containing five columns and fifteen rows (for a total of seventy-five words). The words in the table were color names—red, green, and blue—printed in one of these three colors and organized in no particular order. Once the list was in front of the participants, we asked them to say the color of each word on the list aloud. Their instructions were simple: "If a word is written in red ink, regardless of what the word is, you should say 'red.' If a word is written in green ink, regardless of what the word is, you should say 'green.' And so on. Do this as fast as you can. If at any point you make a mistake, please repeat the word until you get it right."

For the participants in the nondepleting condition, the list of colors was structured such that the name of each color (e.g., green) was written in the same color of ink (green). The participants in the depleting condition were given the same instructions, but the list of words had one key difference—the ink color did not match the name of the color (for instance, the word "blue" would be printed in green ink, and the

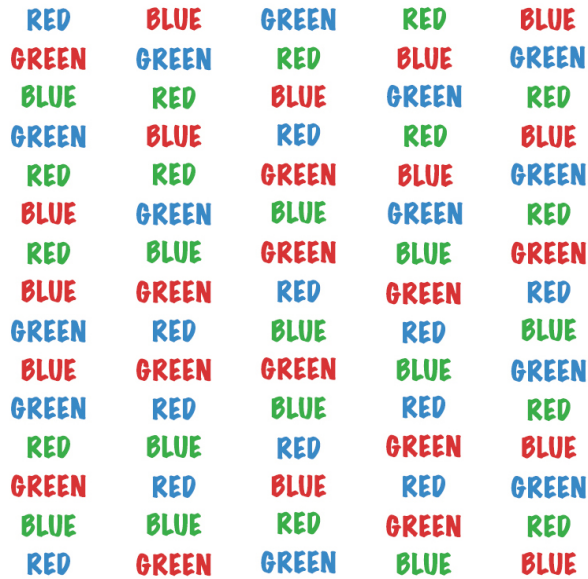
participants were asked to say “green”).

To try the nondepleting condition of this experiment yourself, go to the first Stroop task in the following table (or go to the online color version at http://danariely.com/stroop/) and time how long it takes you to say the colors of all the words in the “Congruent Color Words” list. When you are done, try the depleting condition by timing how long it takes you to say aloud the colors of all the words in the “Incongruent Color Words” list.

NONDEPLETING CONDITION
Congruent Color Words

RED	BLUE	GREEN	RED	BLUE
GREEN	GREEN	RED	BLUE	GREEN
BLUE	RED	BLUE	GREEN	RED
GREEN	BLUE	RED	RED	BLUE
RED	RED	GREEN	BLUE	GREEN
BLUE	GREEN	BLUE	GREEN	RED
RED	BLUE	GREEN	BLUE	GREEN
BLUE	GREEN	RED	GREEN	RED
GREEN	RED	BLUE	RED	BLUE
BLUE	GREEN	GREEN	BLUE	GREEN
GREEN	RED	BLUE	RED	RED
RED	BLUE	RED	GREEN	BLUE
GREEN	RED	BLUE	RED	GREEN
BLUE	BLUE	RED	GREEN	RED
RED	GREEN	GREEN	BLUE	BLUE

DEPLETING CONDITION
Incongruent Color Words


RED BLUE GREEN RED BLUE
GREEN GREEN RED BLUE GREEN
BLUE RED BLUE GREEN RED
GREEN BLUE RED RED BLUE
RED RED GREEN BLUE GREEN
BLUE GREEN BLUE GREEN RED
RED BLUE GREEN BLUE GREEN
BLUE GREEN RED GREEN RED
GREEN RED BLUE RED BLUE
BLUE GREEN GREEN BLUE GREEN
GREEN RED BLUE RED RED
RED BLUE RED GREEN BLUE
GREEN RED BLUE RED GREEN
BLUE BLUE RED GREEN RED
RED GREEN GREEN BLUE BLUE

How long did these two tasks take you? If you are like most of our participants, reading the congruent list (the nondepleting condition) probably took around sixty seconds, but reading the incongruent list (the depleting condition) was probably three to four times more difficult and more time-consuming.

Somewhat ironically, the difficulty of naming the colors in the mismatched list stems from our skill as readers. For experienced readers, the meaning of the words we read comes to mind very quickly, creating an almost automatic reaction to say the corresponding word rather than the color of the ink. We see the green-colored word "red" and want to say "red!" But that is not what we are supposed to do in this task, so with some effort we suppress our initial response and instead name the color of the ink. You may also have noticed that as you keep at this task, you experience a sort of mental exhaustion resulting from the repeated suppression of your quick automatic responses in favor of the more controlled, effortful (and correct) responses.

After completing either the easy or the hard Stroop task, each participant was given the opportunity to take a multiple-choice quiz about the history of Florida State University. The test included questions such as "When was the school founded?" and "How many times did the football team play in the National Championship game between 1993 and 2001?" In total, the quiz included fifty questions, each with four possible answers, and participants were paid according to their performances. The participants were also told that once they finished answering all the questions, they would be given a bubble sheet so that they could transfer their answers from the quiz to the sheet, recycle the quiz itself, and submit only the bubble sheet for payment.

Imagine that you are a student in the condition with the opportunity to cheat. You

have just finished the Stroop task (either the depleting or nondepleting version). You have been answering the quiz questions for the past few minutes, and the time allotted for the quiz is up. You walk up to the experimenter to pick up the bubble sheet so that you can dutifully transfer your answers.

"I'm sorry," the experimenter says, pursing her lips in self-annoyance. "I'm almost out of bubble sheets! I only have one unmarked one, and one that has the answers premarked." She tells you that she did her best to erase the marks on the used bubble sheet but the answers are still slightly visible. Annoyed with herself, she admits that she had hoped to administer one more test today after yours. She next turns to you and asks you a question: "Since you are the first among the last two participants of the day, you can choose which form you would like to use: the clean one or the premarked one."

Of course you realize that taking the premarked bubble sheet would give you an edge if you decided to cheat. Do you take it? Maybe you take the premarked one out of altruism: you want to help the experimenter so that she won't worry so much about it. Maybe you take the premarked one to cheat. Or maybe you think that taking the premarked one would tempt you to cheat, so you reject it because you want to be an honest, upstanding, moral person. Whichever you take, you transfer your answers to that bubble sheet, shred the original quiz, and give the bubble sheet back to the experimenter, who pays you accordingly.

Did the depleted participants recuse themselves from the tempting situation more often, or did they gravitate toward it? As it turned out, they were more likely than nondepleted participants to choose the sheet that tempted them to cheat. As a result of their depletion, they suffered a double whammy: they picked the premarked bubble sheet more frequently, and (as we saw in the previous experiment) they also cheated more when cheating was possible. When we looked at these two ways of cheating combined, we found that we paid the depleted participants 197 percent more than those who were not depleted.

Depletion in Everyday Life

Imagine you're on a protein-and-vegetable diet and you go grocery shopping at the end of the day. You enter the supermarket, vaguely hungry, and detect the smell of warm bread wafting from the bakery. You see fresh pineapple on sale; although you adore it, it is off limits. You wheel your cart to the meat counter to buy some chicken. The crab cakes look good, but they have too many carbohydrates so you pass them by, too. You pick up lettuce and tomatoes for a salad, steeling yourself against the cheesy garlic croutons. You make it to the checkout counter and pay for your goods. You feel very good about yourself and your ability to resist temptation. Then, as you are safely out of the store and on the way to your car, you pass a school bake sale, and a cute little girl offers you a free brownie sample.

Now that you know what you know about depletion, you can predict what your past heroic attempts of resisting temptation may cause you to do: you will most likely give in and take a bite. Having tasted the delicious chocolate melting over your deprived taste buds, you can't possibly walk away. You're dying for more. So you buy enough brownies for a family of eight and end up eating half of them before you even

get home.

NOW THINK ABOUT shopping malls. Say you need a new pair of walking shoes. As you make your way from Neiman Marcus to Sears across a vast expanse of gleaming commercial temptation, you see all kinds of things you want but don't necessarily need. There's that new grill set you've been drooling over, that faux-shearling coat for next winter, and the gold necklace for the party you will most likely attend on New Year's Eve. Every enticing item you pass in the window and don't buy is a crushed impulse, slowly whittling away at your reserve of willpower—making it much more likely that later in the day you will fall for temptation.

Being human and susceptible to temptation, we all suffer in this regard. When we make complex decisions throughout the day (and most decisions are more complex and taxing than naming the colors of mismatched words), we repeatedly find ourselves in circumstances that create a tug-of-war between impulse and reason. And when it comes to important decisions (health, marriage, and so on), we experience an even stronger struggle. Ironically, simple, everyday attempts to keep our impulses under control weaken our supply of self-control, thus making us more susceptible to temptation.

NOW THAT YOU know about the effects of depletion, how can you best confront life's many temptations? Here's one approach suggested by my friend Dan Silverman, an economist at the University of Michigan who was facing grave temptation on a daily basis.

Dan and I were colleagues at the Institute for Advanced Study at Princeton. The Institute is a lovely place for lucky researchers who can take a year off to do little else besides think, go for walks in the woods, and eat well. Every day, after we'd spent our mornings pondering life, science, art, and the reason for it all, we enjoyed a delectable lunch: say, duck breast served with polenta and glazed mushroom caps. Each lunch menu was accompanied by a wonderful dessert: ice cream, crème brûlée, New York cheesecake, triple chocolate cake with raspberry-crème filling. It was torturous, particularly for poor Dan, who had a powerful sweet tooth. Being a smart, rational, cholesterolically challenged economist, Dan wanted dessert, but he also understood that eating dessert daily is not advisable.

Dan thought about his problem for a while and concluded that when faced with temptation, a rational person should sometimes succumb. Why? Because by doing so, the rational person can keep him- or herself from becoming too depleted, remaining strong for whatever temptations the future may bring. So for Dan, who was very careful and concerned about future temptations, it was always carpe diem when it came to the daily dessert. And yes, along with Emre Ozdenoren and Steve Salant, Dan wrote an academic paper justifying this approach.

ON A MORE serious note, these experiments with depletion suggest that, in general, we would be well served to realize that we are continually tempted throughout the day and that our ability to fight this temptation weakens with time and accumulated resistance. If we're really serious about losing weight, we should get rid of temptation

by clearing our shelves and refrigerator of all the sugary, salty, fatty, and processed foods and acclimating to the taste of fresh produce. We should do this not only because we know that fried chicken and cake are bad for us but also because we know that exposing ourselves to such temptations throughout the day (and every time we open a cupboard or the refrigerator) makes it more difficult for us to fight off this and other temptations throughout the day.

Understanding depletion also means that (to the extent that we can) we should face the situations that require self-control—a particularly tedious assignment at work, for example—early in the day, before we are too depleted. This, of course, is not easy advice to follow because the commercial forces around us (bars, online shopping, Facebook, YouTube, online computer games, and so on) thrive on both temptation and depletion, which is why they are so successful.

Granted, we cannot avoid being exposed to all threats to our self-control. So is there any hope for us? Here's one suggestion: once we realize that it is very hard to turn away when we face temptation, we can recognize that a better strategy is to walk away from the draw of desire before we are close enough to be snagged by it. Accepting this advice might not be easy, but the reality is that it is much easier to avoid temptation altogether rather than to overcome it when it sits lingering on the kitchen counter. And if we can't quite do that, we can always try to work on our ability to fight temptation—perhaps by counting to a hundred, singing a song, or making an action plan and sticking to it. Doing any of these can help us build our arsenal of tricks for overcoming temptation so that we are better equipped to fight those urges in the future.

FINALLY, I SHOULD point out that sometimes depletion can be beneficial. Occasionally, we may feel that we are too much in control, dealing with too many restrictions, and that we're not sufficiently free to follow our impulses. Perhaps sometimes, we just need to stop being responsible adults and let loose. So here's a tip: next time you really want to let it all hang out and indulge your primal self, try depleting yourself first by writing a long autobiographical essay without using the letters "a" and "n." Then go to a mall, try on different things, but buy nothing. Afterward, with all of this depletion weighing on you, place yourself in the tempting situation of your choice and let 'er rip. Just don't use this trick too often.

AND IF YOU really need a more official-sounding excuse to succumb to temptation from time to time, just use Dan Silverman's theory of rational self-indulgence as the ultimate license.

CHAPTER 5

Why Wearing Fakes Makes Us Cheat More

Let me tell you the story of my debut into the world of fashion. When Jennifer Wideman Green (a friend of mine from graduate school) ended up living in New York City, she met a number of people in the fashion industry. Through her I met Freeda Fawal-Farah, who worked for *Harper's Bazaar*, a gold standard in the fashion industry. A few months later Freeda invited me to give a talk at the magazine, and because it was such an atypical crowd for me, I agreed.

Before I started my talk, Freeda treated me to a quick fashion tutorial as we sipped our lattes in a balcony café overlooking the escalator in the big downtown Manhattan building. Freeda gave me a rundown of the outfits worn by every woman who passed us, including the brands they were wearing and what her clothes and shoes said about her lifestyle. I found her attention to every detail—indeed, the whole fashion analysis—fascinating, the way I imagine expert bird watchers are able to discern minute differences between species.

About thirty minutes later, I found myself on a stage before an auditorium full of fashion mavens. It was a tremendous pleasure to be surrounded by so many attractive and well-dressed women. Each woman was like an exhibit in a museum: her jewelry, her makeup, and, of course, her stunning shoes. Thanks to Freeda's tutorial, I was able to recognize a few of the brands when I looked out into the rows. I could even discern the sense of fashion that inspired each ensemble.

I wasn't sure why those fashionistas wanted me there or what they expected to hear from me. Still, we seemed to have good chemistry. I talked about how people make decisions, how we compare prices when we are trying to figure out how much something is worth, how we compare ourselves to others, and so on. They laughed when I hoped they would, asked thoughtful questions, and offered plenty of their own interesting ideas. When I finished the talk, Valerie Salembier, the publisher of *Harper's Bazaar*, came onstage, hugged and thanked me—and gave me a stylish black Prada overnight bag.

AFTER SAYING OUR good-byes, I left the building with my new Prada bag and headed downtown to my next meeting. I had some time to kill, so I decided to take a walk. As I wandered, I couldn't help thinking about my big black leather bag with its

large Prada logo displayed. I debated with myself: should I carry my new bag with the logo facing outward? That way, other people could see and admire it (or maybe just wonder how someone wearing jeans and red sneakers could possibly have procured it). Or should I carry it with the logo facing toward me, so that no one could recognize that it was a Prada? I decided on the latter and turned the bag around.

Even though I was pretty sure that with the logo hidden no one realized it was a Prada bag, and despite the fact that I don't think of myself as someone who cares about fashion, something felt different to me. I was continuously aware of the brand on the bag. I was wearing Prada! And it made me feel different; I stood a little straighter and walked with a bit more swagger. I wondered what would happen if I wore Ferrari underwear. Would I feel more invigorated? More confident? More agile? Faster?

I continued walking and passed through Chinatown, which was bustling with activity, food, smells, and street vendors selling their wares along Canal Street. Not far away, I spotted an attractive young couple in their twenties taking in the scene. A Chinese man approached them. "Handbags, handbags!" he called, tilting his head to indicate the direction of his small shop. At first they didn't react. Then, after a moment or two, the woman asked the Chinese man, "You have Prada?"

The vendor nodded. I watched as she conferred with her partner. He smiled at her, and they followed the man to his stand.

The Prada they were referring to, of course, was not actually Prada. Nor were the $5 "designer" sunglasses on display in his stand really Dolce&Gabbana. And the Armani perfumes displayed over by the street food stands? Fakes too.*

From Ermine to Armani

Let's pause for a moment and consider the history of wardrobes, thinking specifically about something social scientists call external signaling, which is simply the way we broadcast to others who we are by what we wear. Going back a way, ancient Roman law included a set of regulations called sumptuary laws, which filtered down through the centuries into the laws of nearly all European nations. Among other things, the laws dictated who could wear what, according to their station and class. The laws went into an extraordinary level of detail. For example, in Renaissance England, only the nobility could wear certain kinds of fur, fabrics, laces, decorative beading per square foot, and so on, while those in the gentry could wear decisively less appealing clothing. (The poorest were generally excluded from the law, as there was little point in regulating musty burlap, wool, and hair shirts.)

Some groups were further differentiated so as not to be confused with "respectable" people. For instance, prostitutes had to wear striped hoods to signal their "impurity," and heretics were sometimes forced to don patches decorated with wood bundles to indicate that they could or should be burned at the stake. In a sense, a prostitute going out without her mandatory striped hood was in disguise, like someone wearing a pair of fake Gucci sunglasses. A solid, nonstriped hood sent a false signal of the woman's livelihood and economic status. People who "dressed above their station" were silently, but directly, lying to those around them. Although dressing above one's station was not a capital offense, those who broke the law were

often hit with fines and other punishments.

What may seem to be an absurd degree of obsessive compulsion on the part of the upper crust was in reality an effort to ensure that people were what they signaled themselves to be; the system was designed to eliminate disorder and confusion. (It clearly had some signaling advantages, though I am not suggesting that we revert back to it.) Although our current sartorial class system is not as rigid as it was in the past, the desire to signal success and individuality is as strong today as ever. The fashionably privileged now wear Armani instead of ermine. And just as Freeda knew that Via Spiga platform heels weren't for everyone, the signals we send are undeniably informative to those around us.

NOW, YOU MIGHT think that the people who buy knockoffs don't actually hurt the fashion manufacturer because many of them would never buy the real thing to start with. But that is where the effect of external signaling comes in. After all, if a bunch of people buy knockoff Burberry scarves for $10, others—the few who can afford the real thing and want to buy it—might not be willing to pay twenty times more for the authentic scarves. If it is the case that when we see a person wearing a signature Burberry plaid or carrying a Louis Vuitton LV-patterned bag, we immediately suspect that it is a fake, then what is the signaling value in buying the authentic version? This perspective means that the people who purchase knockoffs dilute the potency of external signaling and undermine the authenticity of the real product (and its wearer). And that is one reason why fashion retailers and fashionistas care so much about counterfeits.

WHEN THINKING ABOUT my experience with the Prada bag, I wondered whether there were other psychological forces related to fakes that go beyond external signaling. There I was in Chinatown holding my real Prada bag, watching the woman emerge from the shop holding her fake one. Despite the fact that I had neither picked out nor paid for mine, it felt to me that there was a substantial difference between the way I related to my bag and the way she related to hers.

More generally, I started wondering about the relationship between what we wear and how we behave, and it made me think about a concept that social scientists call self-signaling. The basic idea behind self-signaling is that despite what we tend to think, we don't have a very clear notion of who we are. We generally believe that we have a privileged view of our own preferences and character, but in reality we don't know ourselves that well (and definitely not as well as we think we do). Instead, we observe ourselves in the same way we observe and judge the actions of other people—inferring who we are and what we like from our actions.

For example, imagine that you see a beggar on the street. Rather than ignoring him or giving him money, you decide to buy him a sandwich. The action in itself does not define who you are, your morality, or your character, but you interpret the deed as evidence of your compassionate and charitable character. Now, armed with this "new" information, you start believing more intensely in your own benevolence. That's self-signaling at work.

The same principle could also apply to fashion accessories. Carrying a real Prada

bag—even if no one else knows it is real—could make us think and act a little differently than if we were carrying a counterfeit one. Which brings us to the questions: Does wearing counterfeit products somehow make us feel less legitimate? Is it possible that accessorizing with fakes might affect us in unexpected and negative ways?

Calling All Chloés

I decided to call Freeda and tell her about my recent interest in high fashion. (I think she was even more surprised than I was.) During our conversation, Freeda promised to convince a fashion designer to lend me some items to use in some experiments. A few weeks later, I received a package from the Chloé label containing twenty handbags and twenty pairs of sunglasses. The statement accompanying the package told me that the handbags were estimated to be worth around $40,000 and the sunglasses around $7,000.*

With those hot commodities in hand, Francesca Gino, Mike Norton (a professor at Harvard University), and I set about testing whether participants who wore fake products would feel and behave differently from those wearing authentic ones. If our participants felt that wearing fakes would broadcast (even to themselves) a less honorable self-image, we wondered whether they might start thinking of themselves as somewhat less honest. And with this tainted self-concept in mind, would they be more likely to continue down the road of dishonesty?

Using the lure of Chloé accessories, we enlisted many female MBA students for our experiment. (We focused on women not because we thought that they were different from men in any moral way—in fact, in all of our previous experiments we did not find any sex-related differences—but because the accessories we had were clearly designed for women.) We wondered whether to use the sunglasses or the handbags in our first experiments, but when we realized that it would have been a bit more difficult to explain why we wanted our participants to walk around the building with handbags, we settled on the sunglasses.

AT THE START of the experiment, we assigned each woman to one of three conditions: authentic, fake, or no information. In the authentic condition, we told participants that they would be donning real Chloé designer sunglasses. In the fake condition, we told them that they would be wearing counterfeit sunglasses that looked identical to those made by Chloé (in actuality all the products we used were the real McCoy). Finally, in the no-information condition, we didn't say anything about the authenticity of the sunglasses.

Once the women donned their sunglasses, we directed them to the hallway, where we asked them to look at different posters and out the windows so that they could later evaluate the quality and experience of looking through their sunglasses. Soon after, we called them into another room for another task. What was the task? You guessed it: while the women were still wearing their sunglasses we gave them our old friend, the matrix task.

Now imagine yourself as a participant in this study. You show up to the lab, and you're randomly assigned to the fake condition. The experimenter informs you that

your glasses are counterfeit and instructs you to test them out to see what you think. You're handed a rather real-looking case (the logo is spot-on!), and you pull out the sunglasses, examine them, and slip them on. Once you've put on the specs, you start walking around the hallway, examining different posters and looking out the windows. But while you are doing so, what is going through your head? Do you compare the sunglasses to the pair in your car or the ones you broke the other day? Do you think, "Yeah, these are very convincing. No one would be able to tell they're fake." Maybe you think that the weight doesn't feel right or that the plastic seems cheap. And if you do think about the fakeness of what you are wearing, would it cause you to cheat more on the matrix test? Less? The same amount?

Here's what we found. As usual, lots of people cheated by a few questions. But while "only" 30 percent of the participants in the authentic condition reported solving more matrices than they actually had, 74 percent of those in the fake condition reported solving more matrices than they actually had.

These results gave rise to another interesting question. Did the presumed fakeness of the product make the women cheat more than they naturally would? Or did the genuine Chloé label make them behave more honestly than they would otherwise? In other words, which was more powerful: the negative self-signaling in the fake condition or the positive self-signaling in the authentic condition?

This is why we also had the no-information (control) condition, in which we didn't mention anything about whether the sunglasses were real or fake. How would the no-information condition help us? Let's say that women wearing the fake glasses cheated at the same level as those in the no-information condition. If that were the case, we could conclude that the counterfeit label did not make the women any more dishonest than they were naturally and that the genuine label was causing higher honesty. On the other hand, if we saw that the women wearing the real Chloé sunglasses cheated at the same level as those in the no-information condition (and much less than those in the fake-label condition), we would conclude that the authentic label did not make the women any more honest than they were naturally and that the fake label was causing women to behave less honestly.

As you'll recall, 30 percent of women in the authentic condition and 73 percent of women in the fake-label condition overreported the number of matrices they solved. And in the no-information condition? In that condition 42 percent of the women cheated. The no-information condition was between the two, but it was much closer to the authentic condition (in fact, the two conditions were not statistically different from each other). These results suggest that wearing a genuine product does not increase our honesty (or at least not by much). But once we knowingly put on a counterfeit product, moral constraints loosen to some degree, making it easier for us to take further steps down the path of dishonesty.

The moral of the story? If you, your friend, or someone you are dating wears counterfeit products, be careful! Another act of dishonesty may be closer than you expect.

The "What-the-Hell" Effect

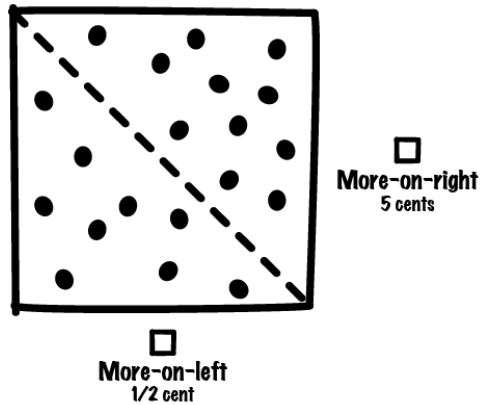
Now let's pause for a minute to think again about what happens when you go on a

diet. When you start out, you work hard to stick to the diet's difficult rules: half a grapefruit, a slice of dry multigrain toast, and a poached egg for breakfast; turkey slices on salad with zero-calorie dressing for lunch; baked fish and steamed broccoli for dinner. As we learned in the preceding chapter, "Why We Blow It When We're Tired," you are now honorably and predictably deprived. Then someone puts a slice of cake in front of you. The moment you give in to temptation and take that first bite, your perspective shifts. You tell yourself, "Oh, what the hell, I've broken my diet, so why not have the whole slice—along with that perfectly grilled, mouthwatering cheeseburger with all the trimmings I've been craving all week? I'll start anew tomorrow, or maybe on Monday. And this time I'll really stick to it." In other words, having already tarnished your dieting self-concept, you decide to break your diet completely and make the most of your diet-free self-image (of course you don't take into account that the same thing can happen again tomorrow and the day after, and so on).

To examine this foible in more detail, Francesca, Mike, and I wanted to examine whether failing at one small thing (such as eating one french fry when you're supposedly on a diet) can cause one to abandon the effort altogether.

This time, imagine you're wearing a pair of sunglasses—whether they are authentic Chloé, a fake pair, or a pair of unspecified authenticity. Next, you sit down in front of a computer screen where you're presented with a square divided into two triangles by a diagonal line. The trial starts, and for one second, twenty randomly scattered dots flash within the square (see the diagram below). Then the dots disappear, leaving you with an empty square, the diagonal line, and two response buttons, one marked "more-on-right" and the other marked "more-on-left." Using these two buttons, your task is to indicate whether there were more dots on the right-hand or left-hand side of the diagonal. You do this one hundred times. Sometimes the right-hand side clearly has more dots. Sometimes they are unmistakably concentrated on the left-hand side. Other times it's hard to tell. As you can imagine, you get pretty used to the task, as tedious as it may be, and after a hundred responses the experimenter can tell how accurately you can make these sorts of judgments.

Figure 3: The Dots Task



Next, the computer asks you to repeat the same task two hundred more times. Only this time, you will be paid according to your decisions. Here's the key detail: regardless of whether your responses are accurate or not, every time you select the left-hand button, you will receive half a cent and every time you select the right-hand button, you will receive 5 cents (ten times more money).

With this incentive structure, you are occasionally faced with a basic conflict of interest. Every time you see more dots on the right, there is no ethical problem because giving the honest answer (more on the right) is the same response that makes you the most money. But when you see more dots on the left, you have to decide whether to give the accurate honest answer (more on the left), as you were instructed, or to maximize your profit by clicking the more-on-right button. By creating this skewed payment system, we gave the participants an incentive to see reality in a slightly different way and cheat by excessively clicking the more-on-right button. In other words, they were faced with a conflict between producing an accurate answer and maximizing their profit. To cheat or not to cheat, that was the question. And don't forget, you're doing this while still wearing the sunglasses.

As it turned out, our dots task showed the same general results as the matrix task, with lots of people cheating but just by a bit. Interestingly, we also saw that the amount of cheating was especially large for those wearing the fake sunglasses. What's more, the counterfeit wearers cheated more across the board. They cheated more when it was hard to tell which side had more dots, and they cheated more even when it was clear that the correct answer was more on the left (the side with the lower financial reward).

Those were the overall results, but the reason we created the dots task in the first place was to observe how cheating evolves over time in situations where people have many opportunities to act dishonestly. We were interested in whether our participants started the experiment by cheating only occasionally, trying to maintain the belief that they were honest but at the same time benefitting from some occasional cheating. We suspected that this kind of balanced cheating could last for a while but that at some point participants might reach their "honesty threshold." And once they passed that point, they would start thinking, "What the hell, as long as I'm a cheater, I might

as well get the most out of it." And from then on, they would cheat much more frequently—or even every chance they got.

The first thing that the results revealed was that the amount of cheating increased as the experiment went on. And as our intuitions had suggested, we also saw that for many people there was a very sharp transition where at some point in the experiment, they suddenly graduated from engaging in a little bit of cheating to cheating at every single opportunity they had. This general pattern of behavior is what we would expect from the what-the-hell effect, and it surfaced in both the authentic and the fake conditions. But the wearers of the fake sunglasses showed a much greater tendency to abandon their moral constraints and cheat at full throttle.*

In terms of the what-the-hell effect, we saw that when it comes to cheating, we behave pretty much the same as we do on diets. Once we start violating our own standards (say, with cheating on diets or for monetary incentives), we are much more likely to abandon further attempts to control our behavior—and from that point on there is a good chance that we will succumb to the temptation to further misbehave.

IT SEEMS, THEN, that the clothes do make the man (or woman) and that wearing knockoffs does have an effect on ethical decisions. As is the case with many findings in social science research, there are ways to use this information for both good and ill. On the negative side, one can imagine how organizations could use this principle to loosen the morality of their employees such that they will find it easier to "fake out" their customers, suppliers, regulators, and competitors and, by doing so, increase the company's revenue at the expense of the other parties. On the positive side, understanding how slippery slopes operate can direct us to pay more attention to early cases of transgression and help us apply the brakes before it's too late.

Up to No Good

Having completed these experiments, Francesca, Mike, and I had evidence that wearing counterfeits colors the way we view ourselves and that once we are painted as cheaters in our own eyes, we start behaving in more dishonest ways. This led us to another question: if wearing counterfeits changes the way we view our own behavior, does it also cause us to be more suspicious of others?

To find out, we asked another group of participants to put on what we told them were either real or counterfeit Chloé sunglasses. Again, they dutifully walked the hall examining different posters and views from the windows. However, when we called them back to the lab, we did not ask them to perform our matrix or dots task. Instead, we asked them to fill out a rather long survey with their sunglasses on. In this survey, we asked a bunch of irrelevant questions (filler questions) that are meant to obscure the real goal of the study. Among the filler questions, we included three sets of questions designed to measure how our respondents interpreted and evaluated the morality of others.

The questions in set A asked participants to estimate the likelihood that people they know might engage in various ethically questionable behaviors. The questions in set B asked them to estimate the likelihood that when people say particular phrases, they are lying. Finally, set C presented participants with two scenarios depicting

someone who has the opportunity to behave dishonestly, and they were asked to estimate the likelihood that the person in the scenario would take the opportunity to cheat. Here are the questions from all three sets:

Set A: How likely are people you know to engage in the following behaviors?

- Stand in the express line with too many groceries.
- Try to board a plane before their group number is called.
- Inflate their business expense report.
- Tell their supervisor that progress has been made on a project when none has been made.
- Take home office supplies from work.
- Lie to an insurance company about the value of goods that were damaged.
- Buy a garment, wear it, and return it.
- Lie to their partner about the number of sex partners they have had.

Set B: When the following lines are uttered, how likely is it that they are a lie?

- Sorry I'm late, traffic was terrible.
- My GPA is 4.0.
- It was good meeting you. Let's have lunch sometime.
- Sure, I'll start working on that tonight.
- Yes, John was with me last night.
- I thought I already sent that e-mail out. I am sure I did.

Set C: How likely are these individuals to take the action described?

- Steve is the operations manager of a firm that produces pesticides and fertilizers for lawns and gardens. A certain toxic chemical is going to be banned in a year, and for this reason is extremely cheap now. If Steve buys this chemical and produces and distributes his product fast enough, he will be able to make a very nice profit. Please estimate the likelihood that Steve will sell this chemical while it is still legal.
- Dale is the operations manager of a firm that produces health foods. One of their organic fruit beverages has 109 calories per serving. Dale knows that people are sensitive to crossing the critical threshold of 100 calories. He could decrease the serving size by 10 percent. The label will then say that each serving has 98 calories, and the fine print will say that each bottle contains 2.2 servings. Please

estimate the likelihood that Dale will cut the serving size to avoid crossing the 100-calorie-
per-serving threshold.

What were the results? You guessed it. When reflecting on the behavior of people they know (set A), participants in the counterfeit condition judged their acquaintances to be more likely to behave dishonestly than did participants in the authentic condition. They also interpreted the list of common excuses (set B) as more likely to be lies, and judged the actor in the two scenarios (set C) as being more likely to choose the shadier option. In the end, we concluded that counterfeit products not only tend to make us more dishonest; they cause us to view others as less than honest as well.

Fake It Till You Make It

So what can we do with all of these results?

First, let's think about high-fashion companies, which have been up in arms about counterfeits for years. It may be difficult to sympathize with them; you might think that outside their immediate circle, no one should really care about the "woes" of high-end designers who cater to the wealthy. When tempted to buy a fake Prada bag, you might say to yourself, "Well, designer products are too expensive, and it's silly to pay for the real thing." You might say, "I wouldn't consider buying the real product anyway, so the designer isn't really losing any money." Or maybe you would say, "Those fashion companies make so much money that a few people buying fake products won't really make a difference." Whatever rationalizations we come up with —and we are all very good at rationalizing our actions so that they are in line with our selfish motives—it's difficult to find many people who feel that the alarm on the part of high-fashion companies is of grave personal concern.

But our results show that there's another, more insidious story here. High-fashion companies aren't the only ones paying a price for counterfeits. Thanks to self-signaling and the what-the-hell effect, a single act of dishonesty can change a person's behavior from that point onward. What's more, if it's an act of dishonesty that comes with a built-in reminder (think about fake sunglasses with a big "Gucci" stamped on the side), the downstream influence could be long-lived and substantial. Ultimately, this means that we all pay a price for counterfeits in terms of moral currency; "faking it" changes our behavior, our self-image, and the way we view others around us.*

Consider, for example, the fact that academic diplomas hang in many executive suites around the world and decorate even more résumés. A few years ago, *The Wall Street Journal* ran a piece on executives who misrepresent their academic credentials, pointing to top moguls such as Kenneth Keiser, who at the time was the president and COO of PepsiAmericas, Inc. Though Keiser had attended Michigan State University, he never graduated; still, for a long time, he signed off on papers that claimed he had a BA from Michigan State[1] (of course, it is possible that this was just a misunderstanding).

Or consider the case of Marilee Jones, who coauthored a popular guidebook called *Less Stress, More Success: A New Approach to Guiding Your Teen Through College Admissions and Beyond*, in which, among other things, she advocated "being yourself"

in order to be successful in college admissions and job searches. She was MIT's popular dean of admissions, and for twenty-five years, by all accounts, she did her job very well. There was just one problem: she had added several fictitious degrees to her résumé to land that job in the first place. It was an act of cheating, pure and simple. The irony of her fall from grace was not lost on Jones, who apologized for not "having the courage" to correct the "mistakes" on her fake résumé at any point during her employment. When an extremely popular advocate of "being yourself" is toppled by false credentials, what are the rest of us to think?

If you think about this type of cheating in the context of the "what-the-hell" effect, it might be that fake academic credentials often start innocently enough, perhaps along the lines of "fake it till you make it," but once one such act has been established, it can bring about a looser moral standard and a higher tendency to cheat elsewhere. For example, if an executive holding a fake graduate degree puts constant reminders of his fake degree on his letterhead, business cards, résumé, and website, it's not much of a stretch to imagine that he could also start cheating on expense reports, misrepresenting billable hours, or misusing corporate funds. After all, given the what-the-hell effect, it is possible that one initial act of cheating could increase the executive's general level of self-signaled dishonesty, increasing his fudge factor, which would give rise to further fraud.

THE BOTTOM LINE is that we should not view a single act of dishonesty as just one petty act. We tend to forgive people for their first offense with the idea that it is just the first time and everyone makes mistakes. And although this may be true, we should also realize that the first act of dishonesty might be particularly important in shaping the way a person looks at himself and his actions from that point on—and because of that, the first dishonest act is the most important one to prevent. That is why it is important to cut down on the number of seemingly innocuous singular acts of dishonesty. If we do, society might become more honest and less corrupt over time (for more on this, see chapter 8, "Cheating as an Infection").

(DON'T) STEAL THIS BOOK

Finally, no discussion of designer counterfeits could be complete without mentioning their cousin, illegal downloading. (Imagine experiments similar to the ones on fake sunglasses but using illegally downloaded music or movies.) Allow me to share a story about a time when I learned something interesting about illegal downloads. In this particular case, I was the victim. A few months after Predictably Irrational was published, I received the following e-mail:

> ***Dear Mr. Ariely,***
>
> ***I just finished listening to the illegally downloaded version of your audio book this morning, and I wanted to tell you how much I appreciated it.***

I am a 30-year-old African American male from the inner city of Chicago, and for the last five years, I have been making my living by illegally selling CDs and DVDs. I am the only person in my family who is not in prison or homeless. As the last survivor of a family that represents all that is wrong with America, and as someone breaking the law today, I know it is only a matter of time before I join my family in prison.

Some time ago I got a 9-to-5 job, and was excited at the idea of starting a respectable life, but soon after I started, I quit and went back to my illegal business. This is because of the pain I felt at giving up my illegal business that I had built and nurtured for five years. I owned it, and I couldn't find a job that gave me the same feeling of ownership. Needless to say, I could really relate to your research on ownership.

But something else was equally important in pushing me back to the illegal retail business. In the legal retail store where I worked, people often talked about loyalty and care for their customers, but I don't think they understood what this means. In the illegal industry, loyalty and care are much stronger and more intense than anything I encountered in legal retail. Over the years I have built a network of about 100 people who kindly buy from me. We have become real friends with real connections and developed a level of deep care for one another. These connections and friendships with my clients made it very hard for me to give up the business and their friendship in the process.

I'm happy that I listened to your book.

Elijah

After receiving this e-mail from Elijah, I searched the Internet and found a few free downloadable versions of my audiobook and a few scanned copies of the printed version (which, I have to admit, were high-quality scans, including the front and back covers, all the credits and references, and even the copyright notices, which I particularly appreciated).

No matter where you stand on the "information wants to be free" ideological spectrum, seeing your own work distributed for free without permission makes the whole issue of illegal downloads feel a bit more personal, less abstract, and more complex. On the one hand, I'm very happy that people are reading about my research and hopefully benefitting from it. The more the merrier—after all, that is why I write. On the other hand, I also understand the annoyance of those whose work is being illegally copied and sold. Thankfully I have a day job, but I am certain that if I were to rely on writing as my main source of income, illegal downloads would be less of an intellectual curiosity and much more difficult to swallow.

As for Elijah, I think we made a fair exchange. Sure, he illegally copied my audiobook (and made some money in the process), but I learned something interesting about loyalty and care for customers in the illegal industry and even got an idea for possible future research.

WITH ALL OF this in mind, how can we fight our own moral deterioration, the what-the-hell effect, and the potential of one transgressive act to result in long-term negative effects on our morality? Whether we deal with fashion or other domains of life, it should be clear that one immoral act can make another more likely and that immoral acts in one domain can influence our morality in other domains. That being the case, we should focus on early signs of dishonest behaviors and do our best to cut them down in their budding stages before they reach full bloom.

AND WHAT ABOUT the Prada bag that started this whole research project? I made the only possible rational decision: I gave it to my mother.

CHAPTER 6

Cheating Ourselves

Imagine yourself on a soft, sandy beach. The tide is rolling out, creating a wide swath of wet sand for you to wander along. You're heading to the place where you go from time to time to check out girls. Oh, and you're a feisty blue crab. And in reality, you're going to spar with a few other male crabs to see who will win the favor of the females.

Ahead you see a pretty little thing with cute claws. At the same time, you notice that your competition is quickly closing in. You know that the ideal way to handle the situation is to scare off the other crabs. That way you don't have to get into a fight and risk hurting yourself or, worse, lose your chance to mate. So you have to convince the other crabs that you're bigger and stronger. As you inch closer to your competition, you know you need to emphasize your size. However, if you simply pretend to be larger by standing on your toes and halfheartedly waving your claws around, you will probably give yourself away. What to do?

What you need to do is give yourself a pep talk and start believing that you are, in fact, bigger and tougher than you really are. "Knowing" you're the biggest crab on the beach, you stand as high as you can on your hind legs and spread your claws as far and high above you as possible (antlers, peacock tails, and general puffing up help other male creatures do the same thing). Believing in your own fabrication means that you will not flinch. And your (exaggerated) self-confidence might cow your opponents.

NOW BACK TO us. As humans, we have slightly more sophisticated means of puffing ourselves up than our animal counterparts. We have the ability to lie—not just to others but also to ourselves. Self-deception is a useful strategy for believing the stories we tell, and if we are successful, it becomes less likely that we will flinch and accidentally signal that we're anything other than what we pretend to be. I'm hardly endorsing lying as a means of attaining a partner, a job, or anything else. But in this chapter, we'll look at the ways we succeed in fooling ourselves as we try to fool others.

Of course, we can't instantly believe every one of our lies. For instance, let's say you're a guy at a speed-dating event and you're trying to impress an attractive woman. A wild idea enters your mind: you tell her that you have a pilot's license. Even if you sold her this story, it's unlikely you will convince yourself that you do, in

fact, have such a license and start suggesting to the pilots on your next flight how to improve their landings. On the other hand, let's say you go out running with your buddy and you get into a discussion about best running times. You tell your friend that you've run a mile in under seven minutes, when in reality your best time was a tiny bit over seven minutes. A few days later, you tell someone else the same thing. After repeating this slightly exaggerated claim over and over, you could eventually forget that you hadn't actually broken the seven-minute mark. You may come to believe it to such a degree that you might even be willing to bet money on it.

ALLOW ME TO tell you a story of a time when I embraced my own deception. In the summer of 1989—about two years after I left the hospital—my friend Ken and I decided to fly from New York to London to see another friend. We bought the cheapest flight to London, which happened to be on Air India. When the taxi dropped us off at the airport, we were dismayed to see a line of people trailing all the way out of the terminal. Thinking fast, Ken came up with an idea: "Why don't we put you in a wheelchair?" I thought about his suggestion. Not only would I be more comfortable, but we could also get through much faster. (Truthfully speaking, it is difficult for me to stand for a prolonged time because the circulation in my legs is far from good. But I don't need a wheelchair.)

We were both convinced that it was a good plan, so Ken jumped out of the cab and returned with the wheelchair. We breezed through check-in and, with an extra two hours to kill, we enjoyed coffee and a sandwich. But then I needed to use the restroom. So Ken pushed me in the wheelchair to the nearest bathroom, which unfortunately was not designed to accommodate a wheelchair. I maintained my role, though; we got the wheelchair as close to the toilet as possible and I tried to hit the mark from a distance, with limited success.

Once we made it through the bathroom challenge, it was time to board the plane. Our seats were in row 30, and as we neared the entrance to the plane, I realized that the wheelchair was going to be too wide for the aisle. So we did what my new role dictated: I left the wheelchair at the entrance of the plane, grabbed on to Ken's shoulders, and he hauled me to our seats.

As I sat waiting for the flight to take off, I was annoyed that the bathroom in the airport wasn't handicap-accessible and that the airline hadn't provided me with a narrower wheelchair to get to my seat. My irritation increased when I realized that I shouldn't drink anything on the six-hour flight because there would be no way for me to keep up the act and use the bathroom. The next difficulty arose when we landed in London. Once again, Ken had to carry me to the entrance of the plane, and when the airline didn't have a wheelchair waiting for us, we had to wait.

This little adventure made me appreciate the daily irritations of handicapped people in general. In fact, I was so annoyed that I decided to go and complain to the head of Air India in London. Once we got the wheelchair, Ken rolled me to Air India's office, and with an overblown air of indignation I described each difficulty and humiliation and reprimanded the regional head of Air India for the airline's lack of concern for disabled people everywhere. Of course he apologized profusely, and after that we rolled away.

The odd thing is that throughout the process I knew I could walk, but I adopted my

role so quickly and thoroughly that my self-righteousness felt as real as if I had a legitimate reason to be upset. Then after all that, we got to the baggage claim, where I simply picked up my backpack and walked away unhampered, like Keyser Söze in the film *The Usual Suspects*.

TO MORE SERIOUSLY examine self-deception, Zoë Chance (a postdoc at Yale), Mike Norton, Francesca Gino, and I set out to learn more about how and when we deceive ourselves into believing our own lies and whether there are ways to prevent ourselves from doing so.

In the first phase of our exploration, participants took an eight-question IQ-like test (one of the questions, for example, was this: "What is the number that is one half of one quarter of one tenth of 400?"). After they finished taking the quiz, participants in the control group handed their answers over to the experimenter who checked their responses. This allowed us to establish the average performance on the test.*

In the condition where cheating was possible, participants had an answer key at the bottom of the page. They were told that the answer key was there so that they could score how well they did on the test and also to help them estimate in general how good they were at answering these types of questions. However, they were told to answer the questions first and only then use the key for verification. After answering all the questions, participants checked their own answers and reported their own performance.

What did the results from phase one of the study show? As we expected, the group that had the opportunity to "check their answers" scored a few points higher on average, which suggested that they had used the answer key not only to score themselves but also to improve their performance. As was the case with all of our other experiments, we found that people cheat when they have a chance to do so, but not by a whole lot.

Helping Myself to a Higher MENSA Score

The inspiration for this experimental setup came from one of those complimentary magazines that you find in seat-back pockets on airplanes. On one particular flight, I was flipping through a magazine and discovered a MENSA quiz (questions that are supposed to measure intelligence). Since I am rather competitive, I naturally had to try it. The directions said that the answers were in the back of the magazine. After I answered the first question, I flipped to the back to see if I was correct, and lo and behold, I was. But as I continued with the quiz, I also noticed that as I was checking the answer to the question I just finished solving, my eyes strayed just a bit to the next answer. Having glanced at the answer to the next question, I found the next problem to be much easier. At the end of the quiz, I was able to correctly solve most of the questions, which made it easier for me to believe that I was some sort of genius. But then I had to wonder whether my score was that high because I was supersmart or because I had seen the answers out of the corner of my eye (my inclination was, of course, to attribute it to my own intelligence).

The same basic process can take place in any test in which the answers are available on another page or are written upside down, as they often are in magazines

and SAT study guides. We often use the answers when we practice taking tests to convince ourselves that we're smart or, if we get an answer wrong, that we've made a silly mistake that we would never make during a real exam. Either way, we come away with an inflated idea of how bright we actually are—and that's something we're generally happy to accept.

THE RESULTS FROM phase one of our experiments showed that participants tended to look ahead at the answers as a way to improve their score. But this finding did not tell us whether they engaged in straight-up old-fashioned cheating or if they were actually deceiving themselves. In other words, we didn't yet know if the participants knew they were cheating or if they convinced themselves that they legitimately knew the correct answers all along. To figure this out, we added another component to our next experiment.

Imagine that you are taking part in an experiment similar to the previous one. You took the eight-question quiz and answered four questions correctly (50 percent), but thanks to the answers at the bottom of the page, you claimed that you had solved six correctly (75 percent). Now, do you think that your actual ability is in the 50 percent range, or do you think it is in the 75 percent range? On the one hand, you may be aware that you used the answer key to inflate your score, and realize that your real ability is closer to the 50 percent mark. On the other hand, knowing that you were paid as if you really had solved six problems, you might be able to convince yourself that your ability to solve such questions is in reality closer to the 75 percent level.

This is where phase two of the experiment comes in. After finishing the math quiz, the experimenter asks you to predict how well you will do on the next test, in which you will be asked to answer a hundred questions of a similar nature. This time, it's clear that there are not going to be any answers at the bottom of the page (and therefore no chance to consult the key). What do you predict your performance will be on the next quiz? Will it be based on your real ability in the first phase (50 percent), or will it be based on your exaggerated ability (75 percent)? Here is the logic: if you are aware that you used the answer key in the previous test to artificially inflate your score, you would predict that you would correctly solve the same proportion of questions as you solved unassisted in the first test (four out of eight, or around 50 percent). But let's say you started believing that you really did answer six questions correctly on your own and not because you looked at the answers. Now you might predict that in this next test, too, you would correctly solve a much larger percentage of the questions (closer to 75 percent). In truth, of course, you can solve only about half of the questions correctly, but your self-deception may puff you up, crablike, and increase your confidence in your ability.

The results showed that participants experienced the latter sort of self-puffery. The predictions of how well they would perform on the second phase of the test showed that participants not only used the answer key in the first phase to exaggerate their score, but had very quickly convinced themselves that they truly earned that score. Basically, those who had a chance to check their answers in the first phase (and cheated) started believing that their exaggerated performance was a reflection of their true skill.

But what would happen if we paid participants to predict their score accurately in

the second phase? With money on the line, maybe our participants wouldn't so patently ignore the fact that in phase one they had used the answer key to improve their scores. To that end, we repeated the same experiment with a new group of participants, this time offering them up to $20 if they correctly predicted their performance on the second test. Even with a financial incentive to be accurate, they still tended to take full credit for their scores and overestimate their abilities. Despite having a strong motivation to be accurate, self-deception ruled the day.

I KNEW IT ALL ALONG

I give a considerable number of lectures about my research to different groups, from academics to industry types. When I started giving talks, I would often describe an experiment, the results, and finally what I thought we could learn from it. But I often found that some people were rather unsurprised by the results and were eager to tell me so. I found this puzzling because, as the person who actually carried out the research, I'd often been surprised by the outcomes myself. I wondered, were the people in the audience really that insightful? How did they know the results sooner than I did? Or was it just an ex post facto feeling of intuition?

Eventually I discovered a way to combat this "I knew it all along" feeling. I started asking the audience to predict the results of the experiments. After I finished describing the setup and what we measured, I gave them a few seconds to think about it. Then I would ask them to vote on the outcome or write their prediction down. Only once they committed to their answer would I provide the results. The good news is that this approach works. Using this ask-first method, I rarely receive the "I knew it all along" response.

In honor of our natural tendency to convince ourselves that we knew the right answers all along, I call my research center at Duke University "The Center for Advanced Hindsight."

Our Love of Exaggeration

Once upon a time—back in the early 1990s—the acclaimed movie director Stanley Kubrick began hearing stories through his assistant about a man who was pretending to be him. The man-who-would-be-Kubrick (whose real name was Alan Conway and who looked nothing like the dark-bearded director) went around London telling people who he famously was(n't). Since the real Stanley Kubrick was a very private person who shunned the paparazzi, not many people had any idea of what he looked like. So a lot of gullible people, thrilled to "know" the famous director personally, eagerly took Conway's bait. Warner Bros., which financed and distributed Kubrick's films, began calling Kubrick's office practically every day with new complaints from people who could not understand why "Stanley" would not get back to them. After

all, they had treated him to drinks and dinner and paid for his cab, and he had promised them a part in his next film!

One day, Frank Rich (the former theater critic and op-ed columnist of *The New York Times*) was having dinner in a London restaurant with his wife and another couple. As it happened, the Kubrick imitator was sitting at a nearby table with a knighted MP and a few other young men, regaling them with stories of his moviemaking marvels. When the imposter saw Rich at the next table, he walked over to him and told the critic that he was inclined to sue the *Times* for having called him "creatively dormant." Rich, excited to meet the reclusive "Kubrick," asked for an interview. Conway told Rich to call him, gave Rich his home phone number, and . . . disappeared.

Very shortly after this encounter, things began to unravel for Conway as it dawned on Rich and others that they'd been conned. Eventually the truth came out when Conway began selling his story to journalists. He claimed to be a recovering victim of a mental disorder ("It was uncanny. Kubrick just took me over. I really did believe I was him!"). In the end Conway died a penniless alcoholic, just four months before Kubrick.*

Although this story is rather extreme, Conway may well have believed that he was Kubrick when he was parading around in disguise, which raises the question of whether some of us are more prone to believe our own fibs than others. To examine this possibility, we set up an experiment that repeated the basic self-deception task, but this time we also measured participants' general tendency to turn a blind eye to their own failures. To measure this tendency, we asked participants to agree or disagree with a few statements, such as "My first impressions of people are usually right" and "I never cover up my mistakes." We wanted to see whether people who answered "yes" to more of these questions also had a higher tendency for self-deception in our experiment.

Just as before, we saw that those in the answer-key condition cheated and got higher scores. Again, they predicted that they would correctly answer more questions in the following test. And once more, they lost money because they exaggerated their scores and overpredicted their ability. And what about those who answered "yes" to more of the statements about their own propensities? There were many of them, and they were the ones who predicted that they would do best on our second-phase test.

HEROIC VETERANS?

In 1959, America's "last surviving Civil War veteran," Walter Williams, died. He was given a princely funeral, including a parade that tens of thousands gathered to see, and an official week of mourning. Many years later, however, a journalist named William Marvel discovered that Williams had been only five years old when the war began, which meant he wouldn't have been old enough at any point to serve in the military in any capacity. It gets worse, though. The title that Walter Williams bore falsely to the grave had been passed to him from a man named John Salling, who, as Marvel discovered, had also falsely called himself the oldest Civil War

veteran. In fact, Marvel claims that the last dozen of so-called oldest Civil War veterans were all phony.

There are countless other stories like these, even in recent wars, where one might think it would be more difficult to make up and sustain such claims. In one example, Sergeant Thomas Larez received multiple gunshot wounds fighting the Taliban in Afghanistan while helping an injured soldier to safety. Not only did he save his friend's life, but he rallied from his own wounds and killed seven Taliban fighters. So went the reporting of Larez's exploits aired by a Dallas news channel, which later had to run a retraction when it turned out that although Larez was indeed a marine, he had never been anywhere near Afghanistan—the entire story was a lie.

Journalists often uncover such false claims. But once in a while, it's the journalist who's the fibber. With teary eyes and a shaky voice, the longtime journalist Dan Rather described his own career in the marines, even though he had never made it out of basic training. Apparently, he must have believed that his involvement was far more significant than it actually was.[1]

THERE ARE PROBABLY many reasons why people exaggerate their service records. But the frequency of stories about people lying on their résumés, diplomas, and personal histories brings up a few interesting questions: Could it be that when we lie publicly, the recorded lie acts as an achievement marker that "reminds" us of our false achievement and helps cement the fiction into the fabric of our lives? So if a trophy, ribbon, or certificate recognizes something that we never achieved, would the achievement marker help us hold on to false beliefs about our own ability? Would such certificates increase our capacity for self-deception?

BEFORE I TELL you about our experiments on this question I should point out that I proudly hang two diplomas on my office wall. One is an "MIT Bachelor of Science in Charm," and the other is a "PhD in Charm," also from MIT. I was awarded these diplomas by the Charm School, which is an activity that takes place at MIT during the cold and miserable month of January. To fulfill the requirements, I had to take many classes in ballroom dancing, poetry, tie tying, and other such cotillion-inspired skills. And in truth, the longer I have the certificates on my office wall, the more I believe that I am indeed quite charming.

WE TESTED THE effects of certificates by giving our participants a chance to cheat on our first math test (by giving them access to the answer key). After they exaggerated their performance, we gave some of them a certificate emphasizing their (false) achievement on that test. We even wrote their name and score on the certificate and printed it on nice, official-looking paper. The other participants did not receive a certificate. Would the achievement markers raise the participants' confidence in their overstated performance, which in reality was partially based on consulting the answer key? Would it make them believe that their score was, indeed, a true reflection of

their ability?

As it turns out, I am not alone in being influenced by diplomas hanging on the wall. The participants who received a certificate predicted that they would correctly answer more questions on the second test. It looks as though having a reminder of a "job well done" makes it easier for us to think that our achievements are all our own, regardless of how well the job was actually done.

THE NINETEENTH-CENTURY NOVELIST Jane Austen provided a fantastic example of the way our own selfish interests, together with the help of others around us, can get us to believe that our selfishness is really a mark of charity and generosity. In *Sense and Sensibility* there is a revealing scene in which John, the first and only son and legal heir, considers what, exactly, is involved in a promise he made to his father. At his father's deathbed, John promises the old man to take care of his very kind but poor stepmother and three half sisters. Of his own accord, he decides to give the women £3,000, a mere fraction of his inheritance, which would take care of them nicely. After all, he genially reasons, "he could spare so considerable a sum with little inconvenience."

Despite the satisfaction John gets from this idea and the ease with which the gift can be given, his clever and selfish wife convinces him—without much difficulty and with a great deal of specious reasoning—that any money he gives his stepfamily will leave him, his wife, and their son "impoverished to a most dreadful degree." Like a wicked witch from a fairy tale, she argues that his father must have been light-headed. After all, the old man was minutes from death when he made the request. She then harps on the stepmother's selfishness. How can John's stepmother and half sisters think they deserve any money? How can he, her husband, squander his father's fortune by providing for his greedy stepmom and sisters? The son, brainwashed, concludes that "It would be absolutely unnecessary, if not highly indecorous, to do more for the widow and his father's three daughters . . ." Et voilà! Conscience appeased, avarice rationalized, fortune untouched.

SELF-DECEPTION IN SPORTS

All players know that steroid use is against the rules and that if they are ever discovered using them it will tarnish their records as well as the sport. Yet the desire to beat new (steroid-fueled) records and to win media attention and fan adoration drives many athletes to cheat by doping. The problem is everywhere and in every sport. There was Floyd Landis, who was stripped of his Tour de France victory because of steroid use in 2006. The University of Waterloo in Canada suspended its entire football team for a year when eight players tested positive for anabolic steroids. A Bulgarian soccer coach was banned from the sport for four years for giving players steroids before a match in 2010. And yet we can only wonder what steroid users think as they win a match or while receiving a medal. Do they recognize that their praise is undeserved, or do they truly believe that their

performance is a pure tribute to their own skill?

Then, of course, there's baseball. Would Mark McGwire hold so many records if not for steroid use? Did he believe his achievement was owing to his own skill? After admitting to steroid use, McGwire stated, "I'm sure people will wonder if I could have hit all those home runs had I never taken steroids. I had good years when I didn't take any, and I had bad years when I didn't take any. I had good years when I took steroids, and I had bad years when I took steroids. But no matter what, I shouldn't have done it and for that I'm truly sorry."[2]

Sorry he may be, but in the end neither his fans nor McGwire himself can know exactly how good he really is.

AS YOU CAN see, people tend to believe their own exaggerated stories. Is it possible to stop or at least decrease this behavior? Since offering money to people to judge their performance more accurately did not seem to eliminate self-deception, we decided to intervene beforehand, right at the moment people were tempted with the opportunity to cheat. (This approach is related to our use of the Ten Commandments in chapter 2, "Fun with the Fudge Factor.") Since our participants were clearly able to ignore the effect that the answer key had on their scores, we wondered what would happen if we made the fact that they were relying on the answer key more obvious at the moment that they were using it. If using the answer key to boost their scores was blatantly obvious, would they be less able to convince themselves that they had known the correct answer all along?

In our initial (paper-based) experiments, it was not possible to figure out exactly when our participants' eyes wandered to the answer key and the level to which they were aware of the help that they got from the written answers. So in our next experiment, we had our participants take a computerized version of the same test. This time the answer key at the bottom of the screen was initially hidden from sight. To reveal the answers, participants had to move the cursor to the bottom of the screen, and when the cursor was moved away, the answer key was hidden again. That way the participants were forced to think about exactly when and for how long they used the answer key, and they could not as easily ignore such a clear and deliberate action.

Although almost all of the participants consulted the answer key at least once, we found that this time around (in contrast to the paper-based tests) they did *not* overestimate their performance in the second test. Despite the fact that they still cheated, consciously deciding to use the answer key—rather than merely glancing at the bottom of the page—eliminated their self-deceptive tendencies. It seems, then, that when we are made blatantly aware of the ways we cheat, we become far less able to take unwarranted credit for our performance.

Self-deception and Self-help

So where do we stand on self-deception? Should we maintain it? Eliminate it? I

suspect that self-deception is similar to its cousins, overconfidence and optimism, and as with these other biases, it has both benefits and disadvantages. On the positive side, an unjustifiably elevated belief in ourselves can increase our general well-being by helping us cope with stress; it can increase our persistence while doing difficult or tedious tasks; and it can get us to try new and different experiences.

We persist in deceiving ourselves in part to maintain a positive self-image. We gloss over our failures, highlight our successes (even when they're not entirely our own), and love to blame other people and outside circumstances when our failures are undeniable. Like our friend the crab, we can use self-deception to boost our confidence when we might not otherwise feel bold. Positioning ourselves on the basis of our finer points can help us snag a date, finish a big project, or land a job. (I am not suggesting that you puff up your résumé, of course, but a little extra confidence can often work in our favor.)

On the negative side, to the extent that an overly optimistic view of ourselves can form the basis of our actions, we may wrongly assume that things will turn out for the best and as a consequence not actively make the best decisions. Self-deception can also cause us to "enhance" our life stories with, say, a degree from a prestigious university, which can lead us to suffer a great deal when the truth is ultimately revealed. And, of course, there is the general cost of deception. When we and those around us are dishonest, we start suspecting everyone, and without trust our lives become more difficult in almost every way.

As in other aspects of life, here too the balance lies between happiness (partially driven by self-deception) and optimal decisions for the future (and a more realistic view of ourselves). Sure, it is exciting to be bright-eyed, with hopes for a wonderful future—but in the case of self-deception, our exaggerated beliefs can devastate us when reality comes crashing in.

Some Upsides of Lying

When we lie for another person's benefit, we call it a "white lie." When we tell a white lie, we're expanding the fudge factor, but we're not doing it for selfish reasons. For example, consider the importance of insincere compliments. We all know the gold standard of white lies, in which a woman who is less than svelte puts on a slinky new dress and asks her husband, "Do I look fat in this?" The man does a quick cost-benefit analysis; he sees his whole life pass before his eyes if he answers with the brutal truth. So he tells her, "Darling, you look beautiful." Another evening (marriage) saved.

Sometimes white lies are just social niceties, but other times they can work wonders to help people get through the most difficult of circumstances, as I learned as an eighteen-year-old burn victim.

After an accident that nearly killed me, I found myself in the hospital with third-degree burns covering over 70 percent of my body. From the beginning, the doctors and the nurses kept telling me, "Everything will be okay." And I wanted to believe them. To my young mind, "Everything will be okay" meant that the scars from my burns and many, many skin transplants would eventually fade and go away, just as when someone burns himself while making popcorn or roasting marshmallows over a campfire.

One day toward the end of my first year in the hospital, the occupational therapist said she wanted to introduce me to a recovered burn victim who'd suffered a similar fate a decade earlier. She wanted to demonstrate to me that it was possible for me to go out into the world and do things that I used to do—basically, that everything would be okay. But when the visitor came in, I was horrified. The man was badly scarred—so badly that he looked deformed. He was able to move his hands and use them in all kinds of creative ways, but they were barely functional. This image was far from the way I imagined my own recovery, my ability to function, and the way I would look once I left the hospital. After this meeting I became deeply depressed, realizing that my scars and functionality would be much worse than I had imagined up to that point.

The doctors and nurses told me other well-meaning lies about what kind of pain to expect. During one unbearably long operation on my hands, the doctors inserted long needles from the tips of my fingers through the joints in order to hold my fingers straight so that the skin could heal properly. At the top of each needle they placed a cork so that I couldn't unintentionally scratch myself or poke my eyes. After a couple of months of living with this unearthly contraption, I found that it would be removed in the clinic—not under anesthesia. That worried me a lot, because I imagined that the pain would be pretty awful. But the nurses said, "Oh, don't worry. This is a simple procedure and it's not even painful." For the next few weeks I felt much less worried about the procedure.

When the time came to withdraw the needles, one nurse held my elbow and the other slowly pulled out each needle with pliers. Of course, the pain was excruciating and lasted for days—very much in contrast to how they described the procedure. Still, in hindsight, I was very glad they had lied to me. If they had told me the truth about what to expect, I would have spent the weeks before the extraction anticipating the procedure in misery, dread, and stress—which in turn might have compromised my much-needed immune system. So in the end, I came to believe that there are certain circumstances in which white lies are justified.

CHAPTER 7

Creativity and Dishonesty

We Are All Storytellers

Facts are for people who lack the imagination to create their own truth.

—ANONYMOUS

Once upon a time, two researchers named Richard Nisbett (a professor at the University of Michigan) and Tim Wilson (a professor at the University of Virginia) set up camp at their local mall and laid out four pairs of nylon stockings across a table. They then asked female passersby which of the four they liked best. The women voted, and, by and large, they preferred the pair on the far right. Why? Some said they liked the material more. Some said they liked the texture or the color. Others felt that the quality was the highest. This preference was interesting, considering that all four pairs of stockings were identical. (Nisbett and Wilson later repeated the experiment with nightgowns, and found the same results.)

When Nisbett and Wilson questioned each participant about the rationale behind her choice, not one cited the placement of the stockings on the table. Even when the researchers told the women that all the stockings were identical and that there was simply a preference for the right-hand pair, the women "denied it, usually with a worried glance at the interviewer suggesting that they felt either that they had misunderstood the question or were dealing with a madman."

The moral of this story? We may not always know exactly why we do what we do, choose what we choose, or feel what we feel. But the obscurity of our real motivations doesn't stop us from creating perfectly logical-sounding reasons for our actions, decisions, and feelings.

YOU CAN THANK (or perhaps blame) the left side of your brain for this incredible ability to confabulate stories. As the cognitive neuroscientist Michael Gazzaniga (a professor at the University of California, Santa Barbara) puts it, our left brain is "the interpreter," the half that spins a narrative from our experiences.

Gazzaniga came to this conclusion after many years of research with split-brain patients, a rare group whose corpora callosa—the largest bundle of nerves connecting our brain's two hemispheres—had been cut (usually as a way to reduce epileptic seizures). Interestingly, this brain abnormality means that these individuals can be presented with a stimulus to one half of the brain without the other half having any awareness of it.

Working with a female patient who had a severed corpus callosum, Gazzaniga wanted to find out what happens when you ask the right side of the brain to do something and then ask the left side (which has no information about what is going on in the right side) to provide a reason for that action. Using a device that showed written instructions to the patient's right hemisphere, Gazzaniga instructed the right side of the patient's brain to make her laugh by flashing the word "laugh." As soon as the woman complied, he asked her why she had laughed. The woman had no idea why she laughed, but rather than responding with "I don't know," she made up a story. "You guys come up and test us every month. What a way to make a living!" she said. Apparently she had decided that cognitive neuroscientists were pretty amusing.

This anecdote illustrates an extreme case of a tendency we all have. We want explanations for why we behave as we do and for the ways the world around us functions. Even when our feeble explanations have little to do with reality. We're storytelling creatures by nature, and we tell ourselves story after story until we come up with an explanation that we like and that sounds reasonable enough to believe. And when the story portrays us in a more glowing and positive light, so much the better.

Cheating Myself

In a commencement speech at Cal Tech in 1974, the physicist Richard Feynman told graduates, "The first principle is that you must not fool yourself—and you are the easiest person to fool." As we have seen so far, we human beings are torn by a fundamental conflict—our deeply ingrained propensity to lie to ourselves and to others, and the desire to think of ourselves as good and honest people. So we justify our dishonesty by telling ourselves stories about why our actions are acceptable and sometimes even admirable. Indeed, we're pretty skilled at pulling the wool over our own eyes.

Before we examine in more detail what makes us so good at weaving self-glorifying tales, allow me to tell you a little story about how I once (very happily) cheated myself. Quite a few years ago (when I was thirty), I decided that I needed to trade in my motorcycle for a car. I was trying to decide which car would be the perfect one for me. The Internet was just starting to boom with what I'll politely call "decision aids," and to my delight I found a website that provided advice for purchasing cars. The website was based on an interview procedure, and it presented me with a lot of questions that ranged from preferences for price and safety to what kind of headlights and brakes I wanted.

It took about twenty minutes to answer all the questions. Each time I completed a page of answers, I could see the progress bar indicating that I was that much closer to discovering my personalized dream car. I finished the final page of questions and

eagerly clicked the “Submit” button. In just a few seconds I got my answer. What was the perfect car for me? According to this finely tuned website, the car for me was . . . drum roll, please . . . a Ford Taurus!

I confess that I did not know much about cars. In fact, I know very little about cars. But I certainly knew that I did not want a Ford Taurus.*

I’m not sure what you would do in such a situation, but I did what any creative person might do: I went back into the program and “fixed” my previous answers. From time to time I checked to see how different answers translated into different car recommendations. I kept this up until the program was kind enough to recommend a small convertible—surely the right car for me. I followed that sage advice, and that’s how I became the proud owner of a convertible (which, by the way, has served me loyally for many years).

This experience taught me that sometimes (perhaps often) we don’t make choices based on our explicit preferences. Instead, we have a gut feeling about what we want, and we go through a process of mental gymnastics, applying all kinds of justifications to manipulate the criteria. That way, we can get what we really want, but at the same time keep up the appearance—to ourselves and to others—that we are acting in accordance with our rational and well-reasoned preferences.

Coin Logic

If we accept that we frequently make decisions in this way, perhaps we can make the process of rationalization more efficient and less time-consuming. Here’s how: Imagine that you’re choosing between two digital cameras. Camera A has a nice zoom and a hefty battery, while camera B is lighter and has a snazzier shape. You’re not sure which one to get. You think that camera A is better quality but camera B will make you happier because you like how it looks. What should you do? Here is my advice: Pull a quarter out of your pocket and say to yourself, “Camera A is heads, camera B is tails.” Then toss the coin. If the coin comes up heads and camera A is the one you wanted, good for you, go buy it. But if you’re not happy with the outcome, start the process again, saying to yourself, “The next toss is for real.” Do this until the coin gives you tails. You’ll not only get camera B, which you really wanted all along, but you can justify your decision because you only followed the “advice” of the coin. (You could also replace the coin with your friends and consult them until one of them gives you the advice you want.)

Perhaps that was the real function of the car recommendation software I used to get my convertible. Maybe it was designed not only to help me make a better decision but to create a process that would allow me to justify the choice I really wanted to make. If that is the case, I think it would be useful to develop many more of these handy applications for many other areas of life.

The Liar’s Brain

Most of us think that some people are especially good (or bad) at deception. If this is indeed the case, what characteristics distinguish them? A team of researchers led by Yaling Yang (a postdoc at the University of California, Los Angeles) tried to find out the answer to this question by studying pathological liars—that is, people who lie

compulsively and indiscriminately.

To find participants for their study, Yang and her colleagues went to a Los Angeles temporary employment agency. They figured that at least a few of those who were without permanent employment would have had difficulty holding a job because they were pathological liars. (Obviously, this doesn't apply to all temps.)

The researchers then gave 108 job seekers a battery of psychological tests and conducted several one-on-one interviews with them, their coworkers, and their family members in order to identify major discrepancies that might reveal the pathological liars. In this group, they found twelve people who had pervasive inconsistencies in the stories they told about their work, schooling, crimes committed, and family background. They were also the same individuals who frequently engaged in malingering, or pretending that they were sick in order to get sickness benefits.

Next, the team put the twelve pathological liars—plus twenty-one people who were not pathological liars and were in the same pool of job seekers (the control group)—through a brain scanner to explore each person's brain structure. The researchers focused on the prefrontal cortex, a part of the brain that sits just behind our foreheads and is considered to be in charge of higher-order thinking, such as planning our daily schedule and deciding how to deal with temptations around us. It's also the part of the brain that we depend on for our moral judgments and decision making. In short, it's a kind of control tower for thinking, reasoning, and morality.

In general, there are two types of matter that fill our brains: gray and white. Gray matter is just another name for the collections of neurons that make up the bulk of our brains, the stuff that powers our thinking. White matter is the wiring that connects those brain cells. We all have both gray and white matter, but Yang and her collaborators were particularly interested in the relative amounts of the two types in the participants' prefrontal cortices. They found that pathological liars had 14 percent less gray matter than the control group, a common finding for many psychologically impaired individuals. What could this mean? One possibility is that since the pathological liars had fewer brain cells (the gray matter) fueling their prefrontal cortex (an area crucial to distinguishing between right and wrong), they find it harder to take morality into account, making it easier for them to lie.

But that's not all. You might wonder about the extra space that pathological liars must have in their skulls since they have so much less gray matter. Yang and her colleagues also found that pathological liars had 22 to 26 percent more white matter in the prefrontal cortex than non–pathological liars. With more white matter (remember, this is what links the gray matter), pathological liars are likely able to make more connections between different memories and ideas, and this increased connectivity and access to the world of associations stored in their gray matter might be the secret ingredient that makes them natural liars.

If we extrapolate these findings to the general population, we might say that higher brain connectivity could make it easier for any of us to lie and at the same time think of ourselves as honorable creatures. After all, more connected brains have more avenues to explore when it comes to interpreting and explaining dubious events —and perhaps this is a crucial element in the rationalization of our dishonest acts.

More Creativity Equals More Money

These findings made me wonder whether increased white matter could be linked to both increased lying and increased creativity. After all, people who have more connections among their different brain parts and more associations are presumably also more creative. To test this possible link between creativity and dishonesty, Francesca Gino and I carried out a series of studies. True to the nature of creativity itself, we approached the question from a variety of angles, starting with a relatively simple approach.

When our participants showed up at the lab, we informed them that they would answer some questions followed by a computerized task. The question set included many irrelevant questions about their general experiences and habits (these filler questions were designed to obscure the real intent of the study) and three types of questions that were the focus of the study.

In the first set of questions, we asked the participants to indicate to what degree they would describe themselves using some "creative" adjectives (insightful, inventive, original, resourceful, unconventional, and so on). In the second, we asked them to tell us how often they engage in seventy-seven different activities, some of which require more creativity and some less (bowling, skiing, skydiving, painting, writing, and so forth). In the third and last set of questions, we asked participants to rate how much they identified with statements such as "I have a lot of creative ideas," "I prefer tasks that enable me to think creatively," "I like to do things in an original way," and other similar statements.

Once the participants completed the personality measures, we asked them to complete the dots task, which was presumably unconnected to the questions. In case you don't recall this task, flip back to chapter 5, "Why Wearing Fakes Make Us Cheat More."

What do you think happened? Would participants who chose a large number of creative adjectives, engaged in creative activities more frequently, and viewed themselves as more creative cheat more, less, or about the same as the participants who were not as creative?

We found that participants who clicked the more-on-right button (the one with the higher payout) more often tended to be the same people who scored higher on all three creativity measures. Moreover, the difference between more and less creative individuals was most pronounced in the cases where the difference in the number of dots on the right and left sides was relatively small.

This suggested that the difference between creative and less creative individuals comes into play mostly when there is ambiguity in the situation at hand and, with it, more room for justification. When there was an obvious difference between the number of dots on the two sides of the diagonal, the participants simply had to decide whether to lie or not. But when the trials were more ambiguous and it was harder to tell if there were more dots to the right or the left of the diagonal, creativity kicked into action—along with more cheating. The more creative the individuals, the better they were at explaining to themselves why there were more dots to the right of the diagonal (the side with the higher reward).

Put simply, the link between creativity and dishonesty seems related to the ability to tell ourselves stories about how we are doing the right thing, even when we are

not. The more creative we are, the more we are able to come up with good stories that help us justify our selfish interests.

Does Intelligence Matter?

Although this was an intriguing result, we didn't get too excited just yet. This first study showed that creativity and dishonesty are correlated, but that doesn't necessarily mean that creativity is directly linked to dishonesty. For example, what if a third factor such as intelligence was the factor linked to both creativity and dishonesty?

The link among intelligence, creativity, and dishonesty seems especially plausible when one considers how clever people such as the Ponzi schemer Bernie Madoff or the famous check forger Frank Abagnale (the author of *Catch Me If You Can*) must have been to fool so many people. And so our next step was to carry out an experiment in which we checked to see whether creativity or intelligence was a better predictor of dishonesty.

Again, picture yourself as one of our participants. This time, the testing starts before you even set foot in the lab. A week earlier, you sit down at your home computer and complete an online survey, which includes questions to assess your creativity and also measure your intelligence. We measure your creativity using the same three measures from the previous study, and measure your intelligence in two ways. First, we ask you to answer three questions designed to test your reliance on logic versus intuition using a set of three questions collected by Shane Frederick (a professor at Yale University). Along with the correct answer, each question comes with an intuitive answer that is in fact incorrect.

To give you an example, try this one: "A bat and a ball cost $1.10 in total. The bat costs $1.00 more than the ball. How much does the ball cost?"

Quick! What's the answer?

Ten cents?

Good try, but no. It's the seductive answer, but not the right one.

Although your intuition prods you to answer "$0.10," if you rely on logic more than intuition, you'll check your answer just to be sure: "If the ball were $0.10, the bat would be $1.10, which combine to equal $1.20, not $1.10 (.1 + (1 + .1) = 1.2)! Once you realize that your initial instinct is wrong, you enlist your memory of high school algebra and produce the correct solution (.05 + (1 + .05) = 1.1): 5 cents. Doesn't it feel like the SATs all over again? And congratulations if you got it right. (If not, don't worry, you would have most likely aced the two other questions on this short test.)

Figure 4

The Cognitive Reflection Test (CRT)



A bat and a ball cost $1.10. The bat costs $1.00 more than the ball. How much does the ball cost?

_____ cents



If it takes 5 machines to make 5 widgets in 5 minutes, how long would it take 100 machines to make 100 widgets?

_____ minutes



In a lake, there is a patch of lily pads. Each day the patch doubles in size. If it takes 48 days for the patch to cover the entire lake, how long does it take for the patch to cover half of the lake?

_____ days

Did you write your answers before, during, or after checking the answer key?

1) Default answer is 10; correct answer is 5.
2) Default answer is 100; correct answer is 5.
3) Default answer is 24; correct answer is 47.

Next, we measure your intelligence through a verbal test. Here you're presented with a series of ten words (such as "dwindle" and "palliate"), and for each word you have to choose which of six options is closest in meaning to the target word.

A week later, you come to the lab and settle into one of the computer-facing chairs. Once you're situated, the instructions begin: "You'll be taking part in three different tasks today; these will test your problem-solving abilities, perceptual skills, and general knowledge. For the sake of convenience, we've combined them all into one session."

First up is the problem-solving task, which is none other than our trusty matrix task. When the five minutes for the test are over, you fold your worksheet and drop it into the recycling bin. What do you claim is your score? Do you report your actual score? Or do you dress it up a little?

Your second task, the perceptual skills task, is the dots test. Once again, you can cheat all you want. The incentive is there—you can earn $10 if you cheat in every one of the trials.

Finally, your third and final task is a multiple-choice general-knowledge quiz comprised of fifty questions of varying difficulty and subject matter. The questions include a variety of trivia such as "How far can a kangaroo jump?" (25 to 40 feet) and

"What is the capital of Italy?" (Rome). For each correct answer, you receive 10 cents, for a maximum payout of $5. In the instructions for this last test, we ask that you circle your answers on the question sheet before later transferring them to a bubble sheet.

When you reach the end of this quiz, you put down your pencil. Suddenly the experimenter pipes up, "Oh, my gosh! I goofed! I mistakenly photocopied bubble sheets that are already marked with the correct answers. I'm so sorry. Would you mind using one of these premarked bubble sheets? I'll try to erase all the marks so that they will not show very clearly. Okay?" Of course you agree.

Next the experimenter asks you to copy your answers from the quiz to the premarked bubble sheet, shred the test sheets with your original answers, and only then submit the premarked bubble sheet with your answers in order to collect your payment. Obviously, as you transfer your answers you realize that you can cheat: instead of transferring your own answers to the bubble sheets, you can just fill in the premarked answers and take more money. ("I knew all along that the capital of Switzerland is Bern. I just chose Zurich without thinking about it.")

To sum things up, you've taken part in three tasks in which you can earn up to $20 to put toward your next meal, beer, or textbook. But how much you actually walk away with depends on your smarts and test-taking chops, as well as your moral compass. Would you cheat? And if so, do you think your cheating has anything to do with how smart you are? Does it have anything to do with how creative you are?

Here's what we found: as in the first experiment, the individuals who were more creative also had higher levels of dishonesty. Intelligence, however, wasn't correlated to any degree with dishonesty. This means that those who cheated more on each of the three tasks (matrices, dots, and general knowledge) had on average higher creativity scores compared to noncheaters, but their intelligence scores were not very different.

We also studied the scores of the extreme cheaters, the participants who cheated almost to the max. In each of our measures of creativity, they had higher scores than those who cheated to a lower degree. Once again, their intelligence scores were no different.

Stretching the Fudge Factor: The Case for Revenge

Creativity is clearly an important means by which we enable our own cheating, but it's certainly not the only one. In an earlier book (*The Upside of Irrationality*) I described an experiment designed to measure what happens when people are upset by bad service. Briefly, Ayelet Gneezy (a professor at the University of California, San Diego) and I hired a young actor named Daniel to run some experiments for us in local coffee shops. Daniel asked coffee shop patrons to participate in a five-minute task in return for $5. When they agreed, he handed them ten sheets of paper covered with random letters and asked them to find as many identical adjacent letters as they could and circle them with a pencil. After they finished, he returned to their table, collected their sheets, handed them a small stack of bills, and told them, "Here is your $5, please count the money, sign the receipt, and leave it on the table. I'll be back later to collect it." Then he left to look for another participant. The key was that he

gave them $9 rather than $5, and the question was how many of the participants would return the extra cash.

This was the no-annoyance condition. Another set of customers—those in the annoyance condition—experienced a slightly different Daniel. In the midst of explaining the task, he pretended that his cell phone was vibrating. He reached into his pocket, took out the phone, and said, "Hi, Mike. What's up?" After a short pause, he would enthusiastically say, "Perfect, pizza tonight at eight thirty. My place or yours?" Then he would end his call with "Later." The whole fake conversation took about twelve seconds.

After Daniel slipped the cell phone back into his pocket, he made no reference to the disruption and simply continued describing the task. From that point on, everything was the same as in the no-annoyance condition.

We wanted to see if the customers who had been so rudely ignored would keep the extra money as an act of revenge against Daniel. Turns out they did. In the no-annoyance condition 45 percent of people returned the extra money, but only 14 percent of those who were annoyed did so. Although we found it pretty sad that more than half the people in the no-annoyance condition cheated, it was pretty disturbing to find that the twelve-second interruption provoked people in the annoyance condition to cheat much, much more.

In terms of dishonesty, I think that these results suggest that once something or someone irritates us, it becomes easier for us to justify our immoral behavior. Our dishonesty becomes retribution, a compensatory act against whatever got our goat in the first place. We tell ourselves that we're not doing anything wrong, we are only getting even. We might even take this rationalization a step further and tell ourselves that we are simply restoring karma and balance to the world. Good for us, we're crusading for justice!

MY FRIEND AND *New York Times* technology columnist David Pogue captured some of the annoyance we feel toward customer service—and the desire for revenge that comes with it. Anyone who knows David would tell you that he is the kind of person who would gladly help anyone in need, so the idea that he would go out of his way to hurt anyone is rather surprising—but when we feel hurt, there is hardly a limit to the extent to which we can reframe our moral code. And David, as you'll see in a moment, is a highly creative individual. Here is David's song (please sing along to the melody of "The Sounds of Silence"):

Hello voice mail, my old friend
I've called for tech support again
I ignored my boss's warning
I called on a Monday morning
Now it's evening and my dinner
First grew cold and then grew mold . . .
I'm still on hold!
I'm listening to the sounds of silence.

You don't seem to understand.

I think your phone lines are unmanned.
I punched every touchtone I was told,
But I've still spent 18 hours on hold.
It's not enough your program crashed my Mac
And it constantly hangs and bombs;
It erased my ROMs!
Now my Mac makes the sounds of silence.

In my dreams I fantasize
Of wreaking vengeance on you guys.
Say your motorcycle crashes;
Blood comes gushing from your gashes.
With your fading strength you call 911
And you pray for a trained MD . . .
But you get me!
And you listen to the sounds of silence!

An Italian Story of Creative Revenge

When I was seventeen and my cousin Yoav was eighteen, we spent the summer backpacking in Europe, having a wonderful time. We met lots of people, saw beautiful cities and places, spent time in museums—it was a perfect European jaunt for two restless teenagers.

Our travel itinerary went from Rome up through Italy and France and finally to England. When we originally bought our youth train passes, the nice fellow at the Rome Eurail office gave us a photocopy of a map of the European train system, carefully marking the train path that we were going to take with a black ballpoint pen. He told us that we could use our passes anytime we wanted within the two-month window but that we could travel only along the particular route he had drawn. He stapled the flimsy photocopied map to a more official printed receipt and handed us the package. Initially, we were certain that no conductor would respect this rather unsophisticated-looking map and ticket combo, but the ticket seller assured us that it was all we needed, and in fact that proved to be the case.

After enjoying the sights in Rome, Florence, Venice, and a few smaller Italian towns, we spent a few nights on the shore of a lake outside Verona. On our last night by the lake, we woke up to find that someone had been through our backpacks and strewn our stuff all over the place. After taking a careful inventory of our belongings, we saw that all of our clothes and even my camera were still there. The only thing missing was Yoav's extra pair of sneakers. We would have considered it a minor loss, except for the fact that Yoav's mother (my aunt Nava), in her infinite wisdom, had wanted to make sure that we had some emergency cash in case someone stole our money. So she had tucked a few hundred dollars in Yoav's extra pair of sneakers. The irony of the situation was painful.

We decided to look around the town to see if we could spot someone wearing Yoav's sneakers and went to the police as well. Given the fact that the local policemen understood little English, it was rather difficult to convey the nature of the crime—

that a pair of sneakers had been stolen and that it was important because there was cash hidden in the sole of the right shoe. Not surprisingly, we never recovered Yoav's sneakers, and that left us somewhat embittered. In our minds it was an unfair turn of events, and Europe owed us one.

ABOUT A WEEK after the sneaker-theft incident, we decided that in addition to the other places on our route we also wanted to visit Switzerland and the Netherlands. We could have purchased new train tickets for the detour, but remembering the stolen shoes and the lack of help from the Italian police, we decided instead to expand our options with a bit of creativity. Using a black ballpoint pen just like the ticket seller's, we drew another path on our photocopied map. This one passed through Switzerland on the way to France and from there to England. Now the map showed two possible routes for our journey: the original route and our modified one. When we showed the maps to the next few conductors, they did not comment on our artwork, so we continued sketching extra routes on our maps for a few weeks.

Our scam worked until we were en route to Basel. The Swiss conductor examined our passes, scowled, shook his head, and handed them back to us.

"You are going to have to buy a ticket for this part of your trip," he informed us.

"Oh, but you see, sir," we said ever so politely, "Basel is indeed on our route." We pointed to the modified path on our map.

The conductor was unconvinced. "I am sorry, but you will have to pay for your ticket to Basel, or I will have to ask you to leave the train."

"But, sir," we argued, "all the other conductors have accepted our tickets with no problem."

The conductor shrugged and shook his head again.

"Please, sir," pleaded Yoav, "if you allow us to get to Basel, we will give you this tape of the Doors. They're a great American rock band."

The conductor did not seem amused or particularly interested in the Doors. "Okay," he said. "You can go to Basel."

We weren't sure whether he finally agreed with us, appreciated the gesture, or had just given up. After that incident we stopped adding lines to our map, and soon we returned to our original planned path.

LOOKING BACK ON our dishonest behavior, I am tempted to chalk it up to the stupidity of youth. But I know that's not the whole picture. In fact, I suspect that there are a number of aspects of the situation that enabled us to behave that way and justify our actions as perfectly acceptable.

First, I'm sure that being in a foreign country by ourselves for the first time helped us feel more comfortable with the new rules we were creating.* If we had stopped to give our actions more thought, we would have certainly recognized their seriousness, but somehow without thinking much, we imagined that our creative route enhancements were part of the regular Eurail procedure. Second, losing a few hundred dollars and Yoav's sneakers made us feel that it was okay for us to take some revenge and get Europe to pay us back. Third, since we were on an adventure, maybe we felt more morally adventurous too. Fourth, we justified our actions by convincing

ourselves that we weren't really hurting anything or anyone. After all, we were just drawing a few extra lines on a piece of paper. The train was going on its track anyway; and besides, the trains were never full, so we weren't displacing anyone. It was also the case that we very easily justified our actions to ourselves because when we originally purchased the tickets, we could have picked a different route for the same price. And since the different paths were the same to the Eurail office when we originally purchased the tickets, why would it matter at what point in time we decided to choose a different path? (Maybe that's how people who backdate stock options justify their actions to themselves.) A final source of justification had to do with the physical nature of the ticket itself. Because the Eurail ticket seller had given us just a flimsy piece of photocopied paper with a hand drawing of our planned route, it was physically easy for us to make our changes—and because we were just marking the path in the same way as the ticket seller (making lines on a piece of paper), this physical ease quickly translated into a moral ease as well.

When I think about all of these justifications together, I realize how extensive and expansive our ability to justify is and how prevalent rationalization can be in just about every one of our daily activities. We have an incredible ability to distance ourselves in all kinds of ways from the knowledge that we are breaking the rules, especially when our actions are a few steps removed from causing direct harm to someone else.

The Cheater's Department

Pablo Picasso once said, "Good artists copy, great artists steal." Throughout history, there has been no dearth of creative borrowers. William Shakespeare found his plot ideas in classical Greek, Roman, Italian, and historical sources and then wrote brilliant plays based on them. Even Steve Jobs occasionally boasted that much like Picasso, Apple was shameless about stealing great ideas.

Our experiments thus far suggested that creativity is a guiding force when it comes to cheating. But we didn't know whether we could take some people, increase their creativity, and with it also increase their level of dishonesty. This is where the next step of our empirical investigation came in.

In the next version of our experiments, Francesca and I looked into whether we could increase the level of cheating simply by getting our participants into a more creative mind-set (using what social scientists call priming). Imagine that you're one of the participants. You show up, and we introduce you to the dots task. You start off by completing a practice round, for which you do not receive any payment. Before you transition into the real phase—the one that involves the biased payment—we ask you to complete a sentence creation task. (This is where we work our creativity-inducing magic by using a scrambled sentence task, a common tactic for changing participants' momentary mind-sets.) In this task, you are given twenty sets of five words presented in a random order (such as "sky," "is," "the," "why," "blue"), and you are asked to construct a grammatically correct four-word sentence from each set ("The sky is blue"). What you don't know is that there are two different versions of this task, and you are going to see only one of them. One version is the creative set, in which twelve of the twenty sentences include words related to creativity ("creative,"

"original," "novel," "new," "ingenious," "imagination," "ideas," and so on). The other version is the control set, in which none of the twenty sentences includes any words related to creativity. Our aim was to prime some of the participants into a more innovative, aspiring mind-set à la Albert Einstein or Leonardo da Vinci by using the words associated with creativity. Everyone else was stuck with their usual mind-set.

Once you complete the sentence task (in one of the two versions), you go back to the dots task. But this time you're doing it for real money. Just as before, you earn half a cent for choosing the left side and 5 cents for choosing the right.

What kind of picture did the data paint? Did facilitating a more creative mind-set affect a person's morality? Although the two groups didn't differ in their levels of performance in the practice rounds of the dots task (when there was no payment), there was a difference after the scrambled sentence task. As we expected, the participants who had been primed with the creative words chose "right" (the response with the higher pay) more often than those in the control condition.

SO FAR, IT appeared that a creative mind-set could make people cheat a bit more. In the final stage of our investigation, we wanted to see how creativity and cheating correlate in the real world. We approached a large advertising agency and got most of the employees to answer a series of questions about moral dilemmas. We asked questions such as "How likely would you be to inflate your business expense report?"; "How likely would you be to tell your supervisor that progress has been made on a project when none has been made at all?"; and "How likely are you to take home office supplies from work?" We also asked them which department they worked for within the company (accounting, copywriting, account management, design, and so on). Finally, we got the CEO of the advertising agency to tell us how much creativity was required to work in each of the departments.

Now we knew the basic moral disposition of each employee, their departments, and the level of creativity expected in each department. With this data at hand, we computed the moral flexibility of the employees in each of the different departments and how this flexibility related to the creativity demanded by their jobs. As it turned out, the level of moral flexibility was highly related to the level of creativity required in their department and by their job. Designers and copywriters were at the top of the moral flexibility scale, and the accountants ranked at the bottom. It seems that when "creativity" is in our job description, we are more likely to say "Go for it" when it comes to dishonest behavior.

The Dark Side of Creativity

Of course, we're used to hearing creativity extolled as a personal virtue and as an important engine for the progress of society. It's a trait we aspire to—not just as individuals but also as companies and communities. We honor innovators, praise and envy those who have original minds, and shake our heads when others aren't able to think outside the box.

There's good reason for all of this. Creativity enhances our ability to solve problems by opening doors to new approaches and solutions. It's what has enabled mankind to redesign our world in (sometimes) beneficial ways with inventions

ranging from sewer and clean water systems to solar panels, and from skyscrapers to nanotechnology. Though we still have a way to go, we can thank creativity for much of our progress. After all, the world would be a much bleaker place without creative trailblazers such as Einstein, Shakespeare, and da Vinci.

But that's only part of the story. Just as creativity enables us to envision novel solutions to tough problems, it can also enable us to develop original paths around rules, all the while allowing us to reinterpret information in a self-serving way. Putting our creative minds to work can help us come up with a narrative that lets us have our cake and eat it too, and create stories in which we're always the hero, never the villain. If the key to our dishonesty is our ability to think of ourselves as honest and moral people while at the same time benefitting from cheating, creativity can help us tell better stories—stories that allow us to be even more dishonest but still think of ourselves as wonderfully honest people.

The combination of positive and desired outcomes, on the one hand, and the dark side of creativity, on the other, leaves us in a tight spot. Though we need and want creativity, it is also clear that under some circumstances creativity can have a negative influence. As the historian (and also my colleague and friend) Ed Balleisen describes in his forthcoming book *Suckers, Swindlers, and an Ambivalent State*, every time business breaks through new technological frontiers—whether the invention of the postal service, the telephone, the radio, the computer, or mortgage-backed securities—such progress allows people to approach the boundaries of both technology and dishonesty. Only later, once the capabilities, effects, and limitations of a technology have been established, can we determine both the desirable and abusive ways to use these new tools.

For example, Ed shows that one of the first uses of the U.S. postal service was for selling products that did not exist. It took some time to figure that out, and eventually the problem of mail fraud ushered in a strong set of regulations that now help ensure the high quality, efficiency, and trust in this important service. If you think about technological development from this perspective, it means that we should be thankful to some of the creative swindlers for some of their innovation and some of our progress.

Where does this leave us? Obviously, we should keep hiring creative people, we should still aspire to be creative ourselves, and we should continue to encourage creativity in others. But we also need to understand the links between creativity and dishonesty and try to restrict the cases in which creative people might be tempted to use their skills to find new ways to misbehave.

BY THE WAY, I am not sure if I mentioned it, but I think that I am both incredibly honest and highly creative.

CHAPTER 8

Cheating as an Infection

How We Catch the Dishonesty Germ

I spend a lot of my time giving talks around the world about the effects of irrational behavior. So naturally, I'm a very frequent flyer. One typical itinerary included flying from my home in North Carolina to New York City, then on to São Paulo, Brazil; Bogotá, Colombia; Zagreb, Croatia; San Diego, California; and back to North Carolina. A few days later I flew to Austin, Texas; New York City; Istanbul, Turkey; Cam-den, Maine; and finally (exhausted) back home. In the process of accumulating all those miles, I've sustained an endless number of insults and injuries while grinding through security checkpoints and attempting to retrieve lost baggage. But those pains have been nothing compared to the pain of getting sick while traveling, and I am always trying to minimize my chances of falling ill.

On one particular transatlantic flight, while I was preparing a talk to give the next day on conflicts of interest, my neighbor seemed to have a bad cold. Maybe it was his sickness, my fear of catching something in general, sleep deprivation, or just the random and amusing nature of free associations that made me wonder about the similarity between the germs my seatmate and I were passing back and forth and the recent spread of corporate dishonesty.

As I've mentioned, the collapse of Enron spiked my interest in the phenomenon of corporate cheating —and my interest continued to grow following the wave of scandals at Kmart, WorldCom, Tyco, Halliburton, Bristol-Myers Squibb, Freddie Mac, Fannie Mae, the financial crisis of 2008, and, of course, Bernard L. Madoff Investment Securities. From the sidelines, it seemed that the frequency of financial scandals was increasing. Was this due to improvements in the detection of dishonest and illegal behavior? Was it due to a deteriorating moral compass and an actual increase in dishonesty? Or was there also an infectious element to dishonesty that was getting a stronger hold on the corporate world?

Meanwhile, as my sniffling neighbor's pile of used tissues grew, I began wondering whether someone could become infected with an "immorality bug." If there was a real increase in societal dishonesty, could it be spreading like an infection, virus, or

communicable bacteria, transmitted through mere observation or direct contact? Might there be a connection between this notion of infection and the continually unfolding story of deception and dishonesty that we have increasingly seen all around us? And if there were such a connection, would it be possible to detect such a "virus" early and prevent it from wreaking havoc?

To me, this was an intriguing possibility. Once I got home, I started reading up on bacteria, and I learned that we have innumerable bacteria in, on, and around our bodies. I also learned that as long as we have only a limited amount of the harmful bacteria, we manage rather well. But problems tend to arise when the number of bacteria becomes so great that it disturbs our natural balance or when a particularly bad strain of bacteria makes it through our bodies' defenses.

To be fair, I am hardly the first to think of this connection. In the eighteenth and nineteenth centuries, prison reformers believed that criminals, like the ill, should be kept separated and in well-ventilated places in order to avoid contagion. Of course, I didn't take the analogy between the spread of dishonesty and diseases as literally as my predecessors. Some sort of airborne miasma probably won't transform people into criminals. But at the risk of overstretching the metaphor, I thought that the natural balance of social honesty could be upset, too, if we are put into close proximity to someone who is cheating. Perhaps observing dishonesty in people who are close to us might be more "infectious" than observing the same level of dishonesty in people who aren't so close or influential in our lives. (Consider, for example, the catchphrase "I learned it by watching you" from the antidrug campaign of the 1980s: the ad warned that "Parents who use drugs have children who use drugs.")

Keeping with the infection metaphor, I wondered about the intensity of exposure to cheating and how much dishonest behavior it might take to tilt the scale of our own actions. If we see a colleague walking out of the office supply room with a handful of pens, for example, do we immediately start thinking that it's all right to follow in his footsteps and grab some office supplies ourselves? I suspect that this is not the case. Instead, much like our relationship with bacteria, there might be a slower and more subtle process of accretion: perhaps when we see someone cheat, a microscopic impression is left with us and we become ever so slightly more corrupt. Then, the next time we witness unethical behavior, our own morality erodes further, and we become more and more compromised as the number of immoral "germs" to which we are exposed increases.

A FEW YEARS ago I purchased a vending machine, thinking it would be an interesting tool for running experiments related to pricing and discounts. For a few weeks, Nina Mazar and I used it to see what would happen if we gave people a probabilistic discount instead of a fixed discount. Translated, that means that we set up the machine so that some candy slots were marked with a 30 percent discount off the regular price of $1, while other slots gave users a 70 percent chance of paying the full price of $1.00 and a 30 percent chance of getting all their money back (and therefore paying nothing). In case you are interested in the results of this experiment, we almost tripled sales by probabilistically giving people back their money. This probabilistic discounting is a story for another time, but the idea of people getting their money back gave us an idea for testing another path for cheating.

One morning, I had the machine moved near a classroom building at MIT and set the internal price of the machine to zero for each of the candies. On the outside, each candy allegedly cost 75 cents. But the moment students shelled out three quarters and made their selection, the machine served both the candy and the money. We also put a prominent sign on the machine with a number to call if the machine malfunctioned.

A research assistant sat within eyeshot of the machine and pretended to work on her laptop. But instead she recorded what people did when confronted with the surprise of free candy. After doing this for a while, she observed two types of behavior. First, people took approximately three pieces of candy. When they got their first candy together with their payment, most people checked to see whether it would happen again (which, of course, it did). And then many people decided to go for it a third time. But no one tried more often than that. People undoubtedly remembered a time when a vending machine ate their money without dispensing anything, so they probably felt as though this generous machine was evening out their vending-machine karma.

We also found that more than half of the people looked around for a friend, and when they saw someone they knew, they invited their friend over to partake in the sugar-laden boon. Of course, this was just an observational study, but it led me to suspect that when we do something questionable, the act of inviting our friends to join in can help us justify our own questionable behavior. After all, if our friends cross the ethical line with us, won't that make our action seem more socially acceptable in our own eyes? Going to such lengths to justify our bad behavior might seem over the top, but we often take comfort when our actions fall in line with the social norms of those around us.

Infectious Cheating in Class

After my experience with the vending machine, I started observing the infectious nature of cheating in other places as well—including in my own classes. At the start of the semester a few years ago, I asked the five hundred undergraduate students in my behavioral economics class how many of them believed that they could listen carefully in class while using their computers for non-class-related activities (Facebook, Internet, e-mail, and so on). Thankfully, most of them indicated that they couldn't really multitask very well (which is true). I then asked how many of them had enough self-control to avoid using their laptop for non-class-related activities if it was open in front of them. Almost no one raised a hand.

At that point I was conflicted between prohibiting laptops in the classroom (which are of course useful for taking notes) or allowing laptops but, to help the students fight their lack of self-control, adding some intervention. Being an optimist, I asked the students to raise their right hands and repeat after me, "I will never, never, never use my computer in this course for anything that is not class-related. I will not read or send e-mail; I will not use Facebook or other social networks; and I will not use the Internet to explore any non-class-related material during class time."

The students repeated these words after me, and I was rather pleased with myself —for a while.

From time to time I show videos in class both to illustrate a point and to give the

students a change in pace and attention. I usually take this time to walk to the back of the class and watch the videos with the students from there. Of course, standing at the back of the class also gives me a direct line of sight to the screens of the students' laptops. During the first few weeks of the semester their screens shone only with class-related material. But as the semester drew on—like mushrooms after the rain—I noticed that every week more and more of the screens were opened to very familiar but non-class-related websites and that Facebook and e-mail programs were often front and center.

In retrospect, I think that the darkness that accompanied the videos was one of the culprits in the deterioration of the students' promise. Once the class was in darkness and one student used his laptop for a non-class-related activity, even for just one minute, many of the other students, not just me, could see what he was doing. That most likely led more students to follow the same pattern of misbehavior. As I discovered, the honesty pledge was helpful in the beginning, but ultimately it was no match for the power of the emerging social norm that came from observing the misbehavior of others.*

One Bad Apple

My observations of on-campus cheating and my 30,000-foot musings about social infection were, of course, just speculations. To acquire a more informed view of the infectious nature of cheating, Francesca Gino, Shahar Ayal (a professor at the Interdisciplinary Center in Israel), and I decided to set up a few experiments at Carnegie Mellon University, where Francesca was visiting at the time. We set up the matrix task in the same general way I described earlier (although we used an easier version of the task), but with a few important differences. The first was that along with the worksheets containing the matrices, the experimenter handed out a manila envelope containing $10 worth of cash (eight $1 bills and four half-dollar coins) to each participant. This change in payment procedure meant that at the end of the experiment, the participants paid themselves and left behind their unearned cash.

In the control condition, in which there was no opportunity for cheating, a student who solved seven questions in the allotted time counted how many problems she solved correctly, withdrew the appropriate amount of money from the manila envelope, and placed the money in her wallet. Then the participant handed the worksheet and envelope with the unearned cash back to the experimenter, who checked the worksheet, counted the remaining money in the envelope, and sent the student away with her earnings. So far, so good.

In the shredder condition, the instructions were a bit different. In this condition the experimenter told the participants, "After you count your answers, head over to the shredder at the back of the room, shred your questionnaire, then walk back to your seat and take the amount of money you have earned from the manila envelope. After that, you are free to leave. On your way out, toss the envelope with the unearned money into the box by the door." Then she told the participants to start on the test and began reading a thick book (to make it clear that no one was watching). After the five minutes were over, the experimenter announced that the time was up. The participants put down their pencils, counted the number of their correct answers,

shredded their worksheets, walked back to their seat, paid themselves, and on their way out tossed their envelopes containing the leftover money into the box. Not surprisingly, we found that participants in the shredder condition claimed to have solved more matrices than those in the control condition.

These two conditions created the starting point from which we could test what we really wanted to look at: the social component of cheating. Next, we took the shredder condition (in which cheating was possible) and added a social element to it. What would happen if our participants could observe someone else—a Madoff in the making—cheating egregiously? Would it alter their level of cheating?

Imagine that you are a participant in our so-called Madoff condition. You're seated at a desk, and the experimenter gives you and your fellow participants the instructions. "You may begin!" she announces. You dive into the problem set, trying to solve as many matrices as possible to maximize your earnings. About sixty seconds pass, and you're still on the first question. The clock is ticking.

"I've finished!" a tall, skinny, blond-haired guy says as he stands up and looks at the experimenter. "What should I do now?"

"Impossible," you think. "I haven't even solved the first matrix!" You and everyone else stare at him in disbelief. Obviously, he's cheated. Nobody could have completed all twenty matrices in less than sixty seconds.

"Go shred your worksheet," the instructor tells him. The guy walks to the back of the room, shreds his worksheet, and then says, "I solved everything, so my envelope for the extra money is empty. What should I do with it?"

"If you don't have money to return," the experimenter replies, unfazed, "put the empty envelope in the box, and you are free to go." The student thanks her, waves good-bye to everyone, and leaves the room smiling, having pocketed the entire amount. Having observed this episode, how do you react? Do you become outraged that the guy cheated and got away with it? Do you change your own moral behavior? Do you cheat less? More?

It may make you feel slightly better to know that the fellow who cheated so outrageously was an acting student named David, whom we hired to play this role. We wanted to see if observing David's outrageous behavior would cause the real participants to follow his example, catching the "immorality virus," so to speak, and start cheating more themselves.

Here's what we found. In the Madoff condition, our participants claimed to have solved an average of fifteen out of twenty matrices, an additional eight matrices beyond the control condition, and an additional three matrices beyond the shredder condition. In short, those in the Madoff condition paid themselves for roughly double the number of answers they actually got right.

Here's a quick summary:

Condition	Problems "solved" (out of 20)	Magnitude of cheating
Control (Cheating not possible)	7	0
Shredder (Cheating possible)	12	5
Madoff (Cheating possible)	15	8

THOSE RESULTS, THOUGH interesting, still don't tell us why the participants in the Madoff condition were cheating more. Given David's performance, participants could have made a quick calculation and said to themselves, "If he can cheat and get away with it, it must mean that I can do the same without any fear of getting caught." If this were the case, David's action would have changed participants' cost-benefit analysis by clearly demonstrating that in this experiment, they could cheat and get away with it. (This is the SMORC perspective that we described in chapter 1, "Testing the Simple Model of Rational Crime.")

A very different possibility is that David's actions somehow signaled to the other participants in the room that this type of behavior was socially acceptable, or at least possible, among their peers. In many areas of life, we look to others to learn what behaviors are appropriate and inappropriate. Dishonesty may very well be one of the cases where the social norms that define acceptable behavior are not very clear, and the behavior of others—David, in this case—can shape our ideas about what's right and wrong. From this perspective, the increased cheating we observed in the Madoff condition could be due not to a rational cost-benefit analysis, but rather to new information and mental revision of what is acceptable within the moral boundaries.

To examine which of the two possibilities better explains the increased cheating in the Madoff condition, we set up another experiment, with a different type of social-moral information. In the new setup, we wanted to see whether erasing any concern about being caught but without giving an enacted example of cheating would also cause participants to cheat more. We got David to work for us again, but this time he interjected a question as the experimenter was wrapping up the instructions. "Excuse me," he said to the experimenter in a loud voice, "Given these instructions, can't I just say I solved everything and walk away with all the cash? Is this okay?" After pausing for a few seconds, the experimenter answered, "You can do whatever you want." For obvious reasons, we called this the question condition. Upon hearing this exchange, participants quickly understood that in this experiment they could cheat and get away with it. If you were a participant, would this understanding encourage you to cheat more? Would you conduct a quick cost-benefit analysis and figure that you could walk away with some unearned dough? After all, you heard the experimenter say, "Do whatever you want," didn't you?

Now let's stop and consider how this version of the experiment can help us understand what happened in the Madoff condition. In the Madoff condition the participants were provided with a live example of cheating behavior, which provided them with two types of information: From a cost-benefit perspective, watching David walk out with all the money showed them that in this experiment there are no negative consequences to cheating. At the same time, David's action provided them with a social cue that people just like them seem to be cheating in this experiment. Because the Madoff condition included both elements, we couldn't tell if the increased cheating that followed was due to a reevaluation of the cost-benefit analysis, to the social cue, or to both.

This is where the question condition comes in handy. In this condition, only the first element (cost-benefit perspective) was present. When David asked the question and the experimenter confirmed that cheating was not only possible but also without a consequence, it became clear to the participants that cheating in this setup had no downside. And most important, the question condition changed the participants' understanding of the consequence without giving them a live example and social cue of someone from their social group who cheated. If the amount of cheating in the question condition were the same as in the Madoff condition, we would conclude that what caused the increased level of cheating in both conditions was most likely the information that there was no consequence to cheating. On the other hand, if the amount of cheating in the question condition were much lower than in the Madoff condition, we would conclude that what caused the extra-high level of cheating in the Madoff condition was the social signal—the realization that people from the same social group find it acceptable to cheat in this situation.

What do you think happened? In the question condition, our participants claimed to have solved an average of ten matrices—about three more matrices than in the control condition (which means they did cheat) but by about two fewer matrices than in the shredder condition and by five fewer than in the Madoff condition. After observing the experimenter telling David that he could do what he wanted, cheating actually *decreased*. That was the opposite of what would have happened if our participants had engaged solely in a rational cost-benefit analysis. Moreover, this result suggests that when we become aware of the possibility of immoral behavior, we reflect on our own morality (similar to the Ten Commandments and the honor code experiments in chapter 2, "Fun with the Fudge Factor"). And as a consequence, we behave more honestly.

A Fashion Statement

Although those results were promising, we still wanted to get more direct support and evidence for the idea that cheating might be socially contagious. So we decided to go into the fashion business. Well, sort of.

The structure of our next experiment was the same as in the Madoff condition: our actor stood up a few seconds into the experiment and announced that he had solved everything and so forth. But this time there was one fashion-related difference: the actor wore a University of Pittsburgh sweatshirt.

Let me explain. Pittsburgh has two world-class universities, the University of

Pittsburgh (UPitt) and Carnegie Mellon University (CMU). Like many institutions of higher learning that are in close proximity, these two have a long-standing rivalry. This competitive spirit was just what we needed to further test our cheating-as-a-social-contagion hypothesis.

We conducted all of these experiments at Carnegie Mellon University, and all our participants were Carnegie Mellon students. In the basic Madoff condition, David had worn just a plain T-shirt and jeans and had therefore been assumed to be a Carnegie Mellon student, just like all the other participants. But in our new condition, which we named the "outsider-Madoff condition," David wore a blue-and-gold UPitt sweatshirt. This signaled to the other students that he was an outsider—a UPitt student—and not part of their social group; in fact, he belonged to a rival group.

The logic of this condition was similar to the logic of the question condition. We reasoned that if the increased cheating we observed in the Madoff condition was due to the realization that if David could cheat and get away with it, so could the other participants, and it would not matter if David was dressed as a CMU or a UPitt student. After all, the information that there were no negative consequences to egregious cheating was the same regardless of his outfit. On the other hand, if the increase in cheating in the Madoff condition was due to an emerging social norm that revealed to our participants that cheating was acceptable in their social group, this influence would operate only when our actor was part of their in-group (a Carnegie Mellon student) and not when he was a member of another, rival group (a UPitt student). The crucial element in this design, therefore, was the social link connecting David to the other participants: when he was dressed in a UPitt sweatshirt, would the CMU students continue to play copycat, or would they resist his influence?

To recap the results so far, here's what we saw: When cheating was possible in the shredder condition but not publicized by David, students claimed to have solved, on average, twelve matrices—five more than they did in the control condition. When David stood up wearing regular CMU attire in the Madoff condition, the participants claimed to have solved about fifteen matrices. When David asked a question about the possibility of cheating and he was assured that it was possible, participants claimed to have solved only ten matrices. And finally, in the outsider-Madoff condition (when David wore a UPitt sweatshirt), the students observing him cheat, claimed to have solved only nine matrices. They still cheated relative to the control condition (by about two matrices), but they cheated by about six fewer matrices than when David was assumed to be a part of their CMU social group.

Here's how our results looked:

Condition	Problems "solved" (out of 20)	Magnitude of cheating
Control (Cheating not possible)	7	0
Shredder (Cheating possible)	12	5
Madoff (Cheating possible)	15	8
Question (Cheating possible)	10	3
Outsider-Madoff (Cheating possible)	9	2

Together, these results show not only that cheating is common but that it is infectious and can be increased by observing the bad behavior of others around us. Specifically, it seems that the social forces around us work in two different ways: When the cheater is part of our social group, we identify with that person and, as a consequence, feel that cheating is more socially acceptable. But when the person cheating is an outsider, it is harder to justify our misbehavior, and we become more ethical out of a desire to distance ourselves from that immoral person and from that other (much less moral) out-group.

More generally, these results show how crucial other people are in defining acceptable boundaries for our own behavior, including cheating. As long as we see other members of our own social groups behaving in ways that are outside the acceptable range, it's likely that we too will recalibrate our internal moral compass and adopt their behavior as a model for our own. And if the member of our in-group happens to be an authority figure—a parent, boss, teacher, or someone else we respect—chances are even higher that we'll be dragged along.

In with the In-Crowd

It's one thing to get riled up about a bunch of college students cheating their university out of a few dollars (although even this cheating accumulates quickly); it's quite another when cheating is institutionalized on a larger scale. When a few insiders deviate from the norm, they infect those around them, who in turn infect those around them, and so on—which is what I suspect occurred at Enron in 2001, on Wall Street leading up to 2008, and in many other cases.

One can easily imagine the following scenario: A well-known banker named Bob at Giantbank engages in shady dealings—overpricing some financial products, delaying reporting losses until the next year, and so on—and in the process he makes boatloads of money. Other bankers at Giantbank hear about what Bob is up to. They go out to

lunch and, over their martinis and steaks, discuss what Bob is doing. In the next booth, some folks from Hugebank overhear them. Word gets around.

In a relatively short time, it is clear to many other bankers that Bob isn't the only person to fudge some numbers. Moreover, they consider him as part of their in-group. To them, fudging the numbers now becomes accepted behavior, at least within the realm of "staying competitive" and "maximizing shareholder value."*

Similarly, consider this scenario: one bank uses its government bailout money to pay out dividends to its shareholders (or maybe the bank just keeps the cash instead of lending it). Soon, the CEOs of other banks start viewing this as appropriate behavior. It is an easy process, a slippery slope. And it's the kind of thing that happens all around us every day.

BANKING, OF COURSE, is not the only place this unfortunate kind of escalation takes place. You can find it anywhere, including governing bodies such as the U.S. Congress. One example of deteriorating social norms in the U.S. legislative halls involves political action committees (PACs). About thirty years ago, these groups were established as a way for members of Congress to raise money for their party and fellow lawmakers to use during difficult election battles. The money comes primarily from lobbyists, corporations, and special-interest groups, and the amounts they give are not restricted to the same degree as contributions to individual candidates. Aside from being taxed and having to be reported to the FEC, few restrictions are placed on the use of PAC money.

As you might imagine, members of Congress have gotten into the habit of using their PAC funds for a gamut of non-election-related activities—from babysitting bills to bar tabs, Colorado ski trips, and so on. What's more, less than half of the millions of dollars raised by PACs has gone to politicians actually running in elections; the rest is commonly put toward different perks: fund-raising, overhead, staff, and other expenses. As Steve Henn of the NPR show *Marketplace* put it, "PACs put the fun in fundraising."[1]

To deal with the misuse of PAC money, the very first law that Congress passed after the 2006 congressional election was intended to limit the discretionary spending of Congress members, forcing them to publicly disclose how they spent their PAC money. However, and somewhat predictably from our perspective, the legislation seemed to have no effect. Just a few weeks after passing the law, the congressmen were behaving as irresponsibly as they had before; some spent the PAC money going to strip clubs, blowing thousands of dollars on parties, and generally conducting themselves without a semblance of accountability.

How can this be? Very simple. Over time, as congressmen have witnessed fellow politicians using PAC funds in dubious ways, their collective social norm has taken a turn for the worse. Little by little, it's been established that PACs can be used for all kinds of personal and "professional" activities—and now the misuse of PAC funds is as common as suits and ties in the nation's capital. As Pete Sessions (a Republican congressman from Texas) responded when he was questioned about dropping several grand at the Forty Deuce in Las Vegas, "It's hard for me to know what is normal or regular anymore."[2]

You might suspect, given the polarization in Congress, that such negative social

influences would be contained within parties. You might think that if a Democrat breaks the rules, his behavior would influence only other Democrats and that bad behavior by Republicans would influence only Republicans. But my own (limited) experience in Washington, D.C., suggests that away from the watchful eye of the media, the social practices of Democrats and Republicans (however disparate their ideologies) are much closer than we think. This creates the conditions under which the unethical behavior of any congressman can extend beyond party lines and influence other members, regardless of their affiliation.

ESSAY MILLS

In case you're unfamiliar with them, essay mills are companies whose sole purpose is to generate essays for high school and college students (in exchange for a fee, of course). Sure, they claim that the papers are intended to help the students write their own original papers, but with names such as eCheat.com, their actual purpose is pretty clear. (By the way, the tagline of eCheat.com was at one point "It's Not Cheating, It's Collaborating.")

Professors, in general, worry about essay mills and their impact on learning. But without any personal experience using essay mills and without any idea about what they really do or how good they are, it is hard to know how worried we should be. So Aline Grüneisen (the lab manager of my research center at Duke University) and I decided to check out some of the most popular essay mills. We ordered a set of typical college term papers from a few of the companies, and the topic of the paper we chose was (surprise!) "Cheating."

Here is the task that we outsourced to the essay mills:

> ***When and why do people cheat? Consider the social circumstances involved in dishonesty, and provide a thoughtful response to the topic of cheating. Address various forms of cheating (personal, at work, etc.) and how each of these can be rationalized by a social culture of cheating.***

We requested a twelve-page term paper for a university-level social psychology class, using fifteen references, formatted in American Psychological Association (APA) style, to be completed in two weeks. This was, to our minds, a pretty basic and conventional request. The essay mills charged us from $150 to $216 per paper in advance.

Two weeks later, what we received would best be described as gibberish. A few of the papers attempted to mimic APA style, but none achieved it without glaring errors. The citations were sloppy and the reference lists abominable—including outdated and unknown sources, many of which

were online news stories, editorial posts, or blogs, and some that were simply broken links. In terms of the quality of the writing itself, the authors of all of the papers seemed to have a tenuous grasp of the English language and the structure of a basic essay. Paragraphs jumped clumsily from one topic to another and often collapsed into list form, counting off various forms of cheating or providing a long stream of examples that were never explained or connected to the thesis of the paper. Of the many literary affronts, we found the following gems:

> ***Cheating by healers. Healing is different. There is harmless healing, when healers-cheaters and wizards offer omens, lapels, damage to withdraw, the husband-wife back and stuff. We read in the newspaper and just smile. But these days fewer people believe in wizards.***

> ***If the large allowance of study undertook on scholar betraying is any suggestion of academia and professors' powerful yearn to decrease scholar betraying, it appeared expected these mind-set would component into the creation of their school room guidelines.***

> ***By trusting blindfold only in stable love, loyalty, responsibility and honesty the partners assimilate with the credulous and naïve persons of the past.***

> ***The future generation must learn for historical mistakes and develop the sense of pride and responsibility for its actions.***

At that point we were rather relieved, figuring that the day had not yet arrived when students can submit papers from essay mills and get good grades. Moreover, we concluded that if students did try to buy a paper from an essay mill, just like us, they would feel they had wasted their money and wouldn't try it again.

But the story does not end there. We submitted the essays we purchased to WriteCheck.com, a website that inspects papers for plagiarism, and found that half of the papers we received were largely copied from existing works. We decided to take action and contacted the essay mills to request our money back. Despite the solid proof from WriteCheck.com, the essay mills insisted that they had not plagiarized anything. One company even threatened us with litigation and claimed that they would get in touch with

the dean's office at Duke to alert him to the fact that I had submitted work that was not mine. Needless to say, we never received that refund . . .

The bottom line? Professors shouldn't worry too much about essay mills, at least for now. The technological revolution has not yet solved this particular challenge for students, and they still have no other option but to write their own papers (or maybe cheat the old-fashioned way and use a paper from a student who took the class during a previous semester).

But I do worry about the existence of essay mills and the signal that they send to our students—that is, the institutional acceptance of cheating, not only while they are in school but after they graduate.

How to Regain Our Ethical Health?

The idea that dishonesty can be transmitted from person to person via social contagion suggests that we need to take a different approach to curbing dishonesty. In general, we tend to view minor infractions as just that: trivial and inconsequential. Peccadilloes may be relatively insignificant in and of themselves, but when they accumulate within a person, across many people, and in groups, they can send a signal that it's all right to misbehave on a larger scale. From this perspective, it's important to realize that the effects of individual transgressions can go beyond a singular dishonest act. Passed from person to person, dishonesty has a slow, creeping, socially erosive effect. As the "virus" mutates and spreads from one person to another, a new, less ethical code of conduct develops. And although it is subtle and gradual, the final outcome can be disastrous. This is the real cost of even minor instances of cheating and the reason we need to be more vigilant in our efforts to curb even small infractions.

So what can we do about it? One hint may lie in the Broken Windows Theory, which was the basis of a 1982 *Atlantic* article by George Kelling and James Wilson. Kelling and Wilson proposed a critical component of keeping order in dangerous neighborhoods, and it wasn't just putting more police on the beat. They argued that if people in a run-down area of town see a building with a few broken, long-unrepaired windows, they will be tempted to break even more windows and create further damage to the building and its surroundings, creating a blight effect. Based on the Broken Windows Theory, they suggested a simple strategy for preventing vandalism: fix problems when they are small. If you repair each broken window (or other misbehaviors) immediately, other potential offenders are going to be much less likely to misbehave.

Although the Broken Windows Theory has been difficult to prove or refute, its logic is compelling. It suggests that we should not excuse, overlook, or forgive small crimes, because doing so can make matters worse. This is especially important for those in the spotlight: politicians, public servants, celebrities, and CEOs. It might seem unfair to hold them to higher standards, but if we take seriously the idea that publicly observed behavior has a broader impact on those viewing the behavior, this means that their misbehavior can have greater downstream consequences for society at large. In contrast to this view, it seems that celebrities are too often rewarded with lighter

punishments for their crimes than the rest of the population, which might suggest to the public that these crimes and misdemeanors are not all that bad.

THE GOOD NEWS is that we can also take advantage of the positive side of moral contagion by publicizing the individuals who stand up to corruption. For example, Sherron Watkins of Enron, Coleen Rowley of the FBI, and Cynthia Cooper of WorldCom are great examples of individuals who stood up to internal misconduct in their own organizations, and in 2002 *Time* magazine selected them as People of the Year.

Acts of honesty are incredibly important for our sense of social morality. And although they are unlikely to make the same sensational news, if we understand social contagion, we must also recognize the importance of publicly promoting outstanding moral acts. With more salient and vivid examples of commendable behavior, we might be able to improve what society views as acceptable and unacceptable behaviors, and ultimately improve our actions.

CHAPTER 9

Collaborative Cheating

Why Two Heads Aren't Necessarily Better than One

If you've ever worked in just about any organization, you know that working in teams accounts for a lot of your time. A great deal of economic activity and decision making takes place through collaboration. In fact, the majority of U.S. companies depend on group-based work, and more than half of all U.S. employees currently spend at least part of their day working in a group setting.[1] Try to count the number of meetings, project teams, and collaborative experiences you've had over the last six months, and you will quickly realize how many working hours these group activities consume. Group work also plays a prominent role in education. For example, the majority of MBA students' assignments consist of group-based tasks, and many undergraduate classes also require group-based projects.

In general, people tend to believe that working in groups has a positive influence on outcomes and that it increases the overall quality of decisions.[2] (In fact, much research has shown that collaboration can decrease the quality of decisions. But that's a topic for another time.) In general, the belief is that there is little to lose and everything to gain from collaboration—including encouraging a sense of camaraderie, increasing the level of fun at work, and benefitting from sharing and developing new ideas—all of which add up to more motivated and effective employees. What's not to love?

A FEW YEARS ago, in one of my graduate classes, I lectured about some of my research related to conflicts of interest (see chapter 3, "Blinded by Our Own Motivations"). After class, a student (I'll call her Jennifer) told me that the discussion had struck a chord with her. It reminded her of an incident that had taken place a few years earlier, when she was working as a certified public accountant (CPA) for a large accounting firm.

Jennifer told me that her job had been to produce the annual reports, proxy statements, and other documents that would inform shareholders about the state of their companies' affairs. One day her boss asked her to have her team prepare a report

for the annual shareholders' meeting of one of their larger clients. The task involved going over all of the client's financial statements and determining the company's financial standing. It was a large responsibility, and Jennifer and her team worked hard to put together a comprehensive and detailed report that was honest and realistic. She did her best to prepare the report as accurately as possible, without, for example, overclaiming the company's profits or delaying reporting any losses to the next accounting year. She then left the draft of the report on her boss's desk, looking forward (somewhat anxiously) to his feedback.

Later that day, Jennifer got the report back with a note from her boss. It read, "I don't like these numbers. Please gather your team and get me a revised version by next Wednesday." Now, there are many reasons why her boss might not have "liked" the numbers, and it wasn't entirely clear to her what he meant. Moreover, not "liking" the numbers is an entirely different matter from the numbers being wrong—which was never implied. A multitude of questions ran through Jennifer's head: "What exactly did he want? How different should I make the numbers? Half a percent? One percent? Five percent?" She also didn't understand who was going to be accountable for any of the "improvements" she made. If the revisions turned out to be overly optimistic and someone was going to take the blame for it down the road, would it be her boss or her?

THE PROFESSION OF accounting is itself a somewhat equivocal trade. Sure, there are some clear-cut rules. But then there is a vaguely titled body of suggestions—known as Generally Accepted Accounting Principles (GAAP)—that accountants are supposed to follow. These guidelines afford accountants substantial leeway; they are so general that there's considerable variation in how accountants can interpret financial statements. (And often there are financial incentives to "bend" the guidelines to some degree.) For instance, one of the rules, "the principle of sincerity," states that the accountant's report should reflect the company's financial status "in good faith." That's all well and good, but "in good faith" is both excessively vague and extremely subjective. Of course, not everything (in life or accounting) is precisely quantifiable, but "in good faith" begs a few questions: Does it mean that accountants can act in bad faith?* And toward whom is this good faith directed? The people who run the company? Those who would like the books to look impressive and profitable (which would increase their bonuses and compensation)? Or should it be directed toward the people who have invested in the company? Or is it about those who want a clear idea of the company's financial condition?

Adding to the inherent complexity and ambiguity of her original task, Jennifer was now put under additional pressure by her boss. She'd prepared the initial report in what seemed to her to be good faith, but she realized that she was being asked to bend the accounting rules to some degree. Her boss wanted numbers that reflected more favorably upon the client company. After deliberating for a while, she concluded that she and her team should comply with his request; after all, he was her boss, and he certainly knew a lot more than she did about accounting, how to work with clients, and the client's expectations. In the end, although Jennifer started the process with every intention of being as accurate as possible, she wound up going back to the drawing board, reviewing the statements, reworking the numbers, and

returning with a “better” report. This time, her boss was satisfied.

AFTER JENNIFER TOLD me her story, I continued to think about her work environment and the effect that working on a team with her boss and teammates had on her decision to push the accounting envelope a bit further. Jennifer was certainly in the kind of situation that people frequently face in the workplace, but what really stood out for me was that in this case the cheating took place in the context of a team, which was different from anything we had studied before.

In all of our earlier experiments on cheating, one person alone made the decision to cheat (even if he or she was spurred along by a dishonest act of another person). But in Jennifer’s case, more than one person was directly involved, as is frequently the case in professional settings. In fact, it was clear to Jennifer that in addition to herself and her boss, her teammates would be affected by her actions. At the end of the year, the whole team would be evaluated together as a group—and their bonuses, raises, and future prospects were intertwined.

I started to wonder about the effects of collaboration on individual honesty. When we are part of a group, are we tempted to cheat more? Less? In other words, is a group setting conducive or destructive to honesty? This question is related to a topic we discussed in the previous chapter (“Cheating as an Infection”): whether it’s possible that people can “catch” cheating from one another. But social contagion and social dependency are different. It’s one thing to observe dishonest behavior in others and, based on that, alter our perceptions of what acceptable social norms are; it’s quite another if the financial welfare of others depends on us.

Let’s say you’re working on a project with your coworkers. You don’t necessarily observe them doing anything shady, but you know that they (and you) will benefit if you bend the rules a bit. Will you be more likely to do so if you know that they too will get something out of it? Jennifer’s account suggests that collaboration can cause us to take a few extra liberties with moral guidelines, but is this the case in general?

Before we take a tour of some experiments examining the impact of collaboration on cheating, let’s take a step back and think about possible positive and negative influences of teams and collaboration on our tendency to be dishonest.

Altruistic Cheating: Possible Costs of Collaboration

Work environments are socially complex, with multiple forces at play. Some of those forces might make it easy for group-based processes to turn collaborations into cheating opportunities in which individuals cheat to a higher degree because they realize that their actions can benefit people they like and care about.

Think about Jennifer again. Suppose she was a loyal person and liked to think of herself that way. Suppose further that she really liked her supervisor and team members and sincerely wanted to help them. Based on such considerations, she might have decided to fulfill her boss’s request or even take her report a step further—not because of any selfish reasons but out of concern for her boss’s well-being and deep regard for her team members. In her mind, “bad” numbers might get her boss and team members to fall out of favor with the client and the accounting company—meaning that Jennifer’s concern for her team might lead her to increase the

magnitude of her misbehavior.

Underlying this impulse is what social scientists call social utility. This term is used to describe the irrational but very human and wonderfully empathetic part of us that causes us to care about others and take action to help them out when we can—even at a cost to ourselves. Of course, we are all motivated to act in our own self-interest to some degree, but we also have a desire to act in ways that benefit those around us, particularly those we care about. Such altruistic feelings motivate us to help a stranger who is stuck with a flat tire, return a wallet we've found in the street, volunteer at a homeless shelter, help a friend in need, and so on.

This tendency to care about others can also make it possible to be more dishonest in situations where acting unethically will benefit others. From this perspective, we can think about cheating when others are involved as altruistic—where, like Robin Hood, we cheat because we are good people who care about the welfare of those around us.

Watch Out: Possible Benefits of Collaboration

In Plato's "Myth of the King of Gyges," a shepherd named Gyges finds a ring that makes him invisible. With this newfound power, he decides to go on a crime spree. So he travels to the king's court, seduces the queen, and conspires with her to kill the king and takes control of the kingdom. In telling the story, Plato wonders whether there is anyone alive who could resist taking advantage of the power of invisibility. The question, then, is whether the only force that keeps us from carrying out misdeeds is the fear of being seen by others (J. R. R. Tolkien elaborated on this theme a couple millennia later in *The Lord of the Rings*). To me, Plato's myth offers a nice illustration of the notion that group settings can inhibit our propensity to cheat. When we work within a team, other team members can act informally as monitors, and, knowing that we are being watched, we may be less inclined to act dishonorably.

A CLEVER EXPERIMENT by Melissa Bateson, Daniel Nettle, and Gilbert Roberts (all from the University of Newcastle) illustrated the idea that the mere feeling of being watched can inhibit bad behavior. This experiment took place in the kitchen of the psychology department at the University of Newcastle where tea, coffee, and milk were available for the professors and staff. Over the tea-making area hung a sign saying that beverage drinkers should contribute some cash to the honesty box located nearby. For ten weeks the sign was decorated with images, but the type of image alternated every week. On five of the weeks the sign was decorated with images of flowers, and on the other five weeks the sign was decorated with images of eyes that stared directly at the beverage drinkers. At the end of every week, the researchers counted the money in the honesty box. What did they find? There was some money in the box at the end of the weeks when the image of flowers was hung, but when the glaring eyes were "watching," the box contained almost three times more money.

As is the case with many findings in behavioral economics, this experiment produced a mix of good and bad news. On the negative side, it showed that even members of the psychology department—who you would think would know better—tried to sneak off without paying their share for a common good. On the positive side,

it showed that the mere suggestion that they were being watched made them behave more honestly. It also shows that a full-blown Orwellian "Big Brother is watching" approach is not necessary and that much more subtle suggestions of being watched can be effective in increasing honesty. Who knows? Perhaps a warning sign, complete with watchful eyes, on Jennifer's boss's wall might have made a difference in his behavior.

IN PONDERING JENNIFER'S situation, Francesca Gino, Shahar Ayal, and I began to wonder how dishonesty operates in collaborative environments. Does monitoring help to reduce cheating? Do social connections in groups increase both altruism and dishonesty? And if both of these forces exert their influence in opposite directions, which of the two is more powerful? In order to shed light on this question, we turned once again to our favorite matrix experiment. We included the basic control condition (in which cheating was not possible), the shredder condition (in which cheating was possible), and we added a new condition that introduced a collaborative element to the shredder condition.

As our first step in exploring the effects of groups, we didn't want the collaborators to have an opportunity to discuss their strategy or to become friends, so we came up with a collaboration condition that included no familiarity or connection between the two team members. We called it the distant-group condition. Let's say you are one of the participants in the distant-group condition. As in the regular shredder condition, you sit at a desk and use a number 2 pencil to work on the matrices for five minutes. When the time is up, you walk to the shredder and destroy your test sheet.

Up to that point, the procedure is the same as in the basic shredder condition, but now we introduce the collaborative element. The experimenter tells you that you are part of a two-person team and that each of you will be paid half of the group's total earnings. The experimenter points out that your collection slip is either blue or green and has a number printed in the top-right corner. The experimenter asks you to walk around the room and find the person whose collection slip is different in color but with the same number in the top-right corner. When you find your partner, you sit down together, and each of you writes the number of matrices you correctly solved on your collection slip. Next, you write the other person's score on your collection slip. And finally, you combine the numbers for a total performance measure. Once that's done, you walk over to the experimenter together and hand him both collection slips. Since your worksheets have been shredded, the experimenter has no way to check the validity of your reported earnings. So he takes your word for it, pays you accordingly, and you split the takings.

Do you think people in this situation would cheat more than they did in the individual shredder condition? Here's what we found: when participants learned that both they and someone else would benefit from their dishonesty if they exaggerated their scores more, they ended up engaging in even higher levels of cheating, claiming to have solved three more matrices than when they were cheating just for themselves. This result suggests that we humans have a weakness for altruistic cheating, even if we barely know the person who might benefit from our misbehavior. Sadly, it seems that even altruism can have a dark side.

That's the bad news, and it's not all of it.

HAVING ESTABLISHED ONE negative aspect of collaboration—that people are more dishonest when others, even strangers, can benefit from their cheating—we wanted to turn our experimental sights on a possible positive aspect of collaboration and see what would happen when team members watch each other. Imagine that you're in a room with a few other participants, and you're randomly paired up with someone you have never met before. As luck would have it, you've ended up with a friendly-looking young woman. Before you have a chance to talk to her, you have to complete the matrix task in complete silence. You are player 1, so you start first. You tear into the first matrix, then the second, and then the third. All the while, your partner watches your attempts, successes, and failures. When the five minutes are up, you silently put your pencil down and your partner picks hers up. She starts working on her matrix task while you observe her progress. When the time is up, you walk to the shredder together and shred your worksheets. Then you each write down your own score on the same slip of paper, combine the two numbers for your joint performance score, and walk over to the experimenter's desk to collect your payment—all without saying a word to each other.

What level of cheating did we find? None at all. Despite the general inclination to cheat that we observe over and over, and despite the increase in the propensity to cheat when others can benefit from such actions, being closely supervised eliminated cheating altogether.

SO FAR, OUR experiments on cheating in groups showed two forces at play: altruistic tendencies get people to cheat more when their team members can benefit from their dishonesty, but direct supervision can reduce dishonesty and even eliminate it altogether. Given the coexistence of these two forces, the next question is: which force is more likely to overpower the other in more standard group interactions?

To answer this question, we needed to create an experimental setting that was more representative of how group members interact in a normal, day-to-day environment. You probably noticed that in the first two experiments, our participants didn't really interact with each other, whereas in daily life, group discussion and friendly chatter are an essential and inherent part of group-based collaborations. Hoping to add this important social element to our experimental setup, we devised our next experiment. This time, participants were encouraged to talk to each other, get to know each other, and become friendly. We even gave them lists of questions that they could ask each other in order to break the ice. They then took turns monitoring each other while each of them solved the matrices.

Sadly, we found that cheating reared its ugly head when we added this social element to the mix. When both elements were in the mix, the participants reported that they correctly solved about four extra matrices. So whereas altruism can increase cheating and direct supervision can decrease it, altruistic cheating overpowers the supervisory effect when people are put together in a setting where they have a chance to socialize and be observed.

LONG-TERM RELATIONSHIPS

Most of us tend to think that the longer we are in a relationship with our

doctors, accountants, financial advisers, lawyers, and so on, the more likely it is that they will care more deeply about our well-being, and as a consequence, they will more likely put our needs ahead of their own. For example, imagine that you just received a (nonterminal) diagnosis from your physician and you are faced with two treatment options. One is to start an aggressive, expensive therapy; the other is to wait awhile and see how your body deals with the problem and how it progresses ("watchful waiting" is the official term for this). There is not a definite answer as to which of the two options is better for you, but it is clear that the expensive, aggressive one is better for your physician's pocket. Now imagine that your physician tells you that you should pick the aggressive treatment option and that you should schedule it for next week at the latest. Would you trust his advice? Or would you take into account what you know about conflicts of interests, discount his advice, and maybe go for a second opinion? When faced with such dilemmas, most people trust their service providers to a very high degree and we are even more likely to trust them the longer we have known them. After all, if we have known our advisers for many years, wouldn't they start caring about us more? Wouldn't they see things from our perspective and give us better advice?

Another possibility, however, is that as the relationship extends and grows, our paid advisers—intentionally or not—become more comfortable recommending treatments that are in their own best interest. Janet Schwartz (the Tulane professor who, along with me, enjoyed dinner with the pharmaceutical reps), Mary Frances Luce (a professor at Duke University), and I tackled this question, sincerely hoping that as relationships between clients and service providers deepened, professionals would care more about their clients' welfare and less about their own. What we found, however, was the opposite.

We examined this question by analyzing data from millions of dental procedures over twelve years. We looked at instances when patients received fillings and whether the fillings were made of silver amalgam or white composite. You see, silver fillings last longer, cost less, and are more durable; white fillings, on the other hand, are more expensive and break more easily but are more aesthetically pleasing. So when it comes to our front teeth, aesthetics often reign over practicality, making white fillings the preferred option. But when it comes to our less visible back teeth, silver fillings are the way to go.[3]

What we found was that about a quarter of all patients receive attractive and expensive white fillings in their hidden teeth rather than the functionally superior silver fillings. In those cases, it was most likely that

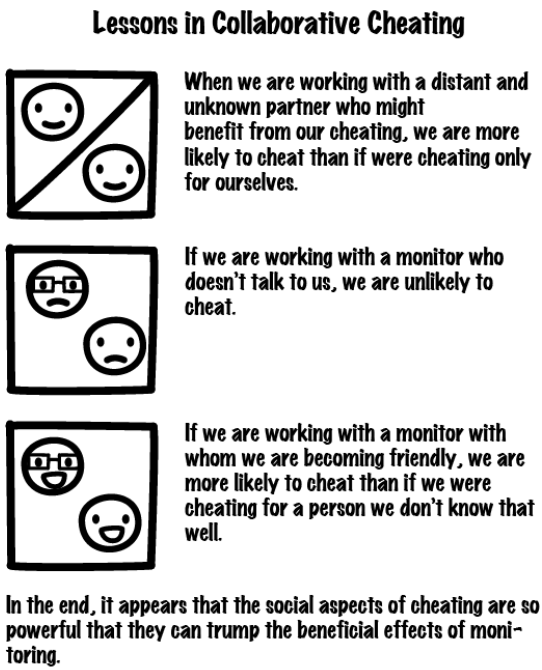
the dentists were making decisions that favored their own interests (higher initial pay and more frequent repairs) over the patients' interests (lower cost and longer-lasting treatment).

As if that weren't bad enough, we also found that this tendency is more pronounced the longer the patient sees the same dentist (we found the same pattern of results for other procedures as well). What this suggests is that as dentists become more comfortable with their patients, they also more frequently recommend procedures that are in their own financial interest. And long-term patients, for their part, are more likely to accept the dentist's advice based on the trust that their relationship has engendered.*

The bottom line: there are clearly many benefits to continuity of care and ongoing patient-provider relationships. Yet, at the same time, we should also be aware of the costs these long-term relationships can have.

HERE'S WHAT WE'VE learned about collaborative cheating so far:

Figure 5


Lessons in Collaborative Cheating
When we are working with a distant and unknown partner who might benefit from our cheating, we are more likely to cheat than if were cheating only for ourselves.
If we are working with a monitor who doesn't talk to us, we are unlikely to cheat.
If we are working with a monitor with whom we are becoming friendly, we are more likely to cheat than if we were cheating for a person we don't know that well.
In the end, it appears that the social aspects of cheating are so powerful that they can trump the beneficial effects of monitoring.

BUT WAIT, THERE'S MORE! In our initial experiments, both the cheater and the

partner benefited from every additional exaggeration of their score. So if you were the cheater in the experiment and you exaggerated the number of your correct responses by one, you would get half of the additional payment and your partner would get the same. This is certainly less financially rewarding than snagging the whole amount for yourself, but you would still benefit from your exaggeration to some degree.

To look into purely altruistic cheating, we introduced a condition in which the fruit of each participant's cheating would benefit *only* their partner. What did we find? As it turns out, altruism is indeed a strong motivator for cheating. When cheating was carried out for purely altruistic reasons and the cheaters themselves did not gain anything from their act, overclaiming increased to an even larger degree.

Why might this be the case? I think that when both we and another person stand to benefit from our dishonesty, we operate out of a mix of selfish and altruistic motives. In contrast, when other people, and only other people, stand to benefit from our cheating, we find it far easier to rationalize our bad behavior in purely altruistic ways and subsequently we further relax our moral inhibitions. After all, if we are doing something for the pure benefit of others, aren't we indeed a little bit like Robin Hood?*

FINALLY, IT IS worthwhile to say something more explicit about performance in the many control conditions that we had in this set of experiments. For each of our cheating conditions (individual shredder, group with shredder, distant group with shredder, friendly group with shredder, altruistic payoff with shredder), we also had a control condition in which there was no opportunity to cheat (that is, no shredder). Looking across these many different control conditions allowed us to see if the nature of collaboration influenced the level of performance. What we found was that performance was the same across all of these control conditions. Our conclusion? It seems that performance doesn't necessarily improve when people work in groups—at least not as much as we've all been led to believe.

OF COURSE, WE cannot survive without the help of others. Working together is a crucial element of our lives. But clearly, collaboration is a double-edged sword. On the one hand, it increases enjoyment, loyalty, and motivation. On the other hand, it carries with it the increased potential for cheating. In the end—and very sadly—it may be that the people who care the most about their coworkers end up cheating the most. Of course, I am not advocating that we stop working in groups, stop collaborating, or stop caring about one another. But we do need to recognize the potential costs of collaboration and increased affinity.

The Irony of Collaborative Work

If collaboration increases dishonesty, what can we do about it? One obvious answer is to increase monitoring. In fact, this seems to be the default response of the government's regulators to every instance of corporate misconduct. For example, the Enron fiasco brought about a large set of reporting regulations known as the Sarbanes-Oxley Act, and the financial crisis of 2008 ushered in an even larger set of

regulations (largely emerging from the Dodd-Frank Wall Street Reform and Consumer Protection Act), which were designed to regulate and increase the supervision of the financial industry.

To some degree, there is no question that monitoring can be helpful, but it is also clear from our results that increased monitoring alone is unlikely to completely overcome our ability to justify our own dishonesty—particularly when others stand to gain from our misbehavior (not to mention the high financial costs of compliance with such regulations).

In some cases, instead of adding layers and layers of rules and regulations, perhaps we could set our sights on changing the nature of group-based collaboration. An interesting solution to this problem was recently implemented in a large international bank by a former student of mine named Gino. To allow his team of loan officers to work together without risking increased dishonesty (for example, by recording the value of the loans as higher than they really were in an effort to show larger short-run profits), he set up a unique supervisory system. He told his loan officers that an outside group would review their processing and approval of loan applications. The outside group was socially disconnected from the loan-making team and had no loyalty or motivation to help out the loan officers. To make sure that the two groups were separated, Gino located them in different office buildings. And he ensured that they had no direct dealings with each other or even knew the individuals in the other group.

I tried to get the data from Gino in order to evaluate the success of his approach, but the lawyers of this large bank stopped us. So, I don't know whether this approach worked or how his employees felt about the arrangement, but I suspect that this mechanism had at least some positive outcomes. It probably decreased the fun that the loan work group had during their meetings. It likely also increased the stress surrounding the groups' decisions, and it was certainly not cheap to implement. Nevertheless, Gino told me that overall, adding the objective and anonymous monitoring element seemed to have a positive effect on ethics, morals, and the bottom line.

CLEARLY, THERE ARE no silver bullets for the complex issue of cheating in group settings. Taken together, I think that our findings have serious implications for organizations, especially considering the predominance of collaborative work in our day-to-day professional lives. There is also no question that better understanding the extent and complexity of dishonesty in social settings is rather depressing. Still, by understanding the possible pitfalls involved in collaboration, we can take some steps toward rectifying dishonest behavior.

CHAPTER 10

A Semioptimistic Ending

People Don't Cheat Enough!

Throughout this book, we've seen that honesty and dishonesty are based on a mixture of two very different types of motivation. On the one hand, we want to benefit from cheating (this is the rational economic motivation), while on the other, we want to be able to view ourselves as wonderful human beings (this is the psychological motivation). You might think that we can't achieve both of these objectives at the same time—that we can't have our cake and eat it too, so to speak—but the fudge factor theory we have developed in these pages suggests that our capacity for flexible reasoning and rationalization allows us to do just that. Basically, as long as we cheat just a little bit, we can have the cake and eat (some of) it too. We can reap some of the benefits of dishonesty while maintaining a positive image of ourselves.

As we've seen, certain forces—such as the amount of money we stand to gain and the probability of being caught—influence human beings surprisingly less than one might think. And at the same time other forces influence us more than we might expect: moral reminders, distance from money, conflicts of interest, depletion, counterfeits, reminders of our fabricated achievements, creativity, witnessing others' dishonest acts, caring about others on our team, and so on.

ALTHOUGH THE FOCUS of the various experiments presented here was on dishonesty, it is also important to remember that most of the participants in our experiments were nice people from good universities who will likely attain positions of some power and influence later on in life. They were not the kind of people one typically associates with cheating. In fact, they were just like you, me, and most of the people on this planet, which means that all of us are perfectly capable of cheating a little bit.

Though that may sound pessimistic, the half-full part of the story is that human beings are, by and large, more moral than standard economic theory predicts. In fact, seen from a purely rational (SMORC) perspective, we humans don't cheat nearly enough. Consider how many times in the last few days you've had the opportunity to

cheat without getting caught. Perhaps a colleague left her purse on her desk while she was away for a long meeting. Maybe a stranger in a coffee shop asked you to watch her laptop while she went to the restroom. Maybe a grocery clerk missed an item in your cart or you passed an unlocked bicycle on an empty street. In any of those situations, the SMORC thing to do would be to take the money, laptop, or bike or not mention the missed item. Yet we pass up the vast majority of these opportunities every day without thinking that we should take them. This means that we're off to a good start in our effort to improve our moral fiber.

What About "Real" Criminals?

Across all of our experiments we've tested thousands of people, and from time to time, we did see aggressive cheaters who keep as much money as possible. In the matrix experiment, for example, we have never seen anyone claim to solve eighteen or nineteen out of the twenty matrices. But once in a while, a participant claimed to have solved all twenty matrices correctly. These are the people who, having made a cost-benefit analysis, decided to get away with as much money as possible. Fortunately, we didn't encounter many of those folks, and because they seemed to be the exception and not the rule, we lost only a few hundred dollars to them. (Not exactly thrilling, but not too bad.) At the same time, we had thousands and thousands of participants who cheated by "just" a few matrices, but because there were so many of them, we lost thousands and thousands of dollars to them—much, much more than we lost to the aggressive cheaters.

I suspect that in terms of my financial losses to the aggressive and to the small cheaters, our experiments are indicative of dishonesty in society at large. Very few people steal to a maximal degree. But many good people cheat just a little here and there by rounding up their billable hours, claiming higher losses on their insurance claims, recommending unnecessary treatments, and so on. Companies also find many ways to cheat a little bit. Think about credit card companies that raise interest rates ever so slightly for no apparent reason and invent all kinds of hidden fees and penalties (which are often referred to, within companies, as "revenue enhancements"). Think about banks that slow down check processing so that they can hold on to our money for an extra day or two or charge exorbitant fees for overdraft protection and for using ATMs. All of this means that although it is obviously important to pay attention to flagrant misbehaviors, it is probably even more important to discourage the small and more ubiquitous forms of dishonesty—the misbehaviors that affect all of us most of the time—both as perpetrators and as victims.

A Word About Cultural Differences

I travel a lot, which means that I get to meet people from all over the world, and when I do, I often ask them about honesty and morality in their countries. As a result, I'm beginning to understand how cultural differences—whether regional, national, or corporate—contribute to dishonesty.

If you grew up outside the United States, think about this for a minute: do people from your home country cheat more or less than Americans do? After asking many

people from various countries this question, I've discovered that people have very strong beliefs about cheating in their own countries, and most believe that people in their home country cheat more than Americans do (with the somewhat predictable exception of people from Canada and the Nordic countries).

Understanding that these are only subjective impressions, I was curious to see whether there really was something to them. So I decided to test some of these cultural perceptions more directly. In order to explore cultural differences, we first had to come up with a way to equate the financial incentives across the various locations. If we always paid, for example, an amount equivalent to $1 for a correctly solved question, this would range from being a very high payment in some places to a rather low one in others. Our first idea of how to equate the size of the incentives was to use a product that would be internationally recognized, such as a McDonald's hamburger. Following this approach, for each matrix solved correctly, participants could receive one-quarter of the cost of a McDonald's hamburger in that location. (This approach assumed that the people setting prices at McDonald's understand the economic buying power in each location and set their prices accordingly.)

In the end we decided on a related approach and used the "beer index." We set up shop in local bars and paid participants one-quarter of the cost of a pint of beer for every matrix that they claimed to have solved. (To make sure that our participants were sober, we only approached bargoers as they were entering the bar.)

BECAUSE I GREW up in Israel, I especially wanted to see how Israelis measured up (I admit that I suspected that Israelis would cheat more than Americans). But as it turned out, our Israeli participants cheated in the matrix experiments just as much as the Americans. We decided to check other nationalities, too. Shirley Wang, one of my Chinese collaborators, was convinced that Chinese people would cheat more than Americans. But again, the Chinese showed the same levels of dishonesty. Francesca Gino, from Italy, was positive that Italians would cheat the most. "Come to Italy, and we will show you what cheating is all about," she said in her fantastic accent. But she was proven wrong too. We discovered the same results in Turkey, Canada, and England. In fact, the amount of cheating seems to be equal in every country—at least in those we've tested so far.

How can we reconcile the fact that our experiments don't show any real differences in dishonesty among various countries and cultures with the very strong personal conviction that people from different countries cheat to different degrees? And how can we reconcile the lack of differences we see in our results with the clear differences in corruption levels among countries, cultures, and continents? I think that both perspectives are correct. Our data reflect an important and real aspect of cheating, but so do cultural differences. Here's why.

Our matrix test exists outside any cultural context. That is, it's not an ingrained part of any social or cultural environment. Therefore, it tests the basic human capacity to be morally flexible and reframe situations and actions in ways that reflect positively on ourselves. Our daily activities, on the other hand, are entwined in a complex cultural context. This cultural context can influence dishonesty in two main ways: it can take particular activities and transition them into and out of the moral domain, and it can change the magnitude of the fudge factor that is considered

acceptable for any particular domain.

Take plagiarism, for example. At American universities, plagiarism is taken very seriously, but in other cultures it is viewed as a kind of poker game between the students and faculty. In those cultures getting caught, rather than the act of cheating itself, is viewed negatively. Similarly, in some societies, different kinds of cheating—not paying taxes, having an affair, downloading software illegally, and running red lights when there is no traffic around—are frowned upon, while in other societies the same activities are viewed as neutral or even confer bragging rights.

Of course, there's a great deal more to learn about the influence of culture on cheating, both in terms of the societal influences that help curb dishonesty and in terms of the social forces that make dishonesty and corruption more likely.

P.S. I SHOULD point out that throughout all of our cross-cultural experiments, there was one time we did find a difference. At some point Racheli Barkan and I carried out our experiment in a bar in Washington, D.C., where many congressional staffers gather. And we carried out the same experiment in a bar in New York City where many of the customers are Wall Street bankers. That was the one place where we found a cultural difference. Who do you think cheated more, the politicians or the bankers? I was certain that it was going to be the politicians, but our results showed the opposite: the bankers cheated about twice as much. (But before you begin suspecting your banker friends more and your politician friends less, you should take into account that the politicians we tested were junior politicians—mainly congressional staffers. So they had plenty of room for growth and development.)

CHEATING AND INFIDELITY

Of course, no book about cheating would be complete if it didn't contain something about adultery and the kinds of complex and intricate subterfuges that extramarital relationships inspire. After all, in the popular vernacular, cheating is practically synonymous with infidelity.

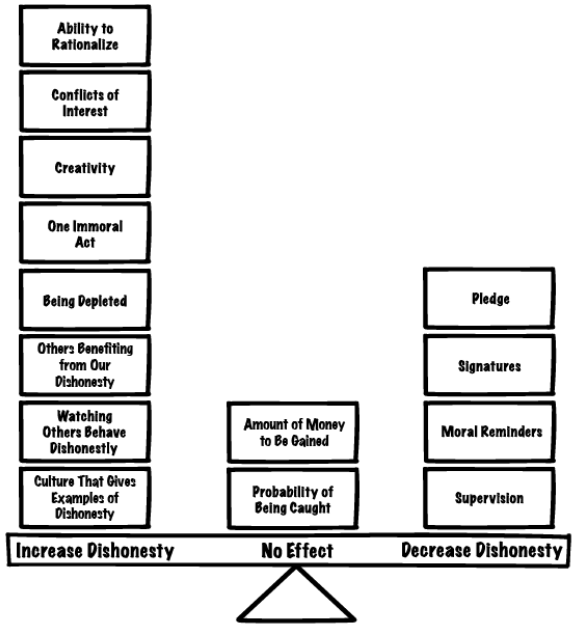
In fact, infidelity can be considered one of the main sources of the world's most dramatic entertainment. If modern-day adulterers such as Liz Taylor, Prince Charles, Tiger Woods, Brad Pitt, Eliot Spitzer, Arnold Schwarzenegger, and many others hadn't cheated on their spouses, the tabloid magazine and various entertainment news outlets would probably go belly-up (so to speak).

In terms of the fudge factor theory, infidelity is most likely the prototypical illustration of all the characteristics of dishonesty that we have been talking about. To start with, it is the poster child (or at least one of them) of a behavior that does not stem from a cost-benefit analysis. I also suspect that the tendency toward infidelity depends to a great extent on being able to justify it to ourselves. Starting with one small action (maybe a kiss) is another force that can lead to deeper kinds of involvement over

time. Being away from the usual day-to-day routine, for example on a tour or a set, where the social rules are not as clear, can further enhance the ability to self-justify infidelity. And creative people, such as actors, artists, and politicians—all known for a tendency to be unfaithful—are likely to be more adept at spinning stories about why it's all right or even desirable for them to behave that way. And similar to other types of dishonesty, infidelity is influenced by the actions of those around us. Someone who has a lot of friends and family who have had affairs will likely be influenced by that exposure.

With all of this complexity, nuance, and social importance, you might wonder why there isn't a chapter in this book about infidelity and why this rather fascinating topic is relegated to one small section. The problem is data. I generally like to stick to conclusions I can draw from experiments and data. Conducting experiments on infidelity would be nearly impossible, and the data by their very nature are difficult to estimate. This means that for now we are left to speculate—and only speculate—about infidelity.

Figure 6: A Summary of the Forces That Shape Dishonesty



What Should We Do Next?

So here we are, surrounded by dishonesty. As one Apoth E. Cary put it in 1873:

Swindle, swindle, everywhere,
Every shape and size;
Take the swindle out of a man,
And you've nothing left but lies.
Philanthropy is made to cover a fraud,
Charity keeps humbugs in tow;
And we're swindled at home, swindled abroad,
And swindled wherever we go.
For the world is full of humbugs
Managed by dishonest men;
One moves on, another comes,
And we're swindled again and again.

—APOTH E. CARY, "RECOLLECTIONS OF THE SWINDLE FAMILY"[1]

As we have seen, we are all capable of cheating, and we are very adept at telling ourselves stories about why, in doing so, we are not dishonest or immoral. Even worse, we are prone to "catch" the cheating bug from other people, and once we start acting dishonestly, we are likely to continue misbehaving that way.

So what should we do about dishonesty? We recently experienced a tremendous financial crisis, which has provided an excellent opportunity to examine human failure and the role that irrationality plays in our lives and in society at large. In response to this man-made disaster, we've taken some steps toward coming to terms with some of our irrational tendencies, and we've begun reevaluating our approach to markets accordingly. The temple of rationality has been shaken, and with our improved understanding of irrationality we should be able to rethink and reinvent new kinds of structures that will ultimately help us avoid such crises in the future. If we don't do this, it will have been a wasted crisis.

MEMENTO MORI

There are a lot of possible connections one can draw between Roman times and modern-day banking, but perhaps the most important of them is memento mori. At the peak of Rome's power, Roman generals who had won significant victories marched through the middle of the city displaying their spoils. The marching generals wore purple-and-gold ceremonial robes, a crown of laurels, and red paint on their face as they were carried through the city on a throne. They were hailed, celebrated, and admired. But there was one more element to the ceremony: throughout the day a slave walked next to the general, and in order to prevent the victorious general from falling into hubris, the slave whispered repeatedly into his ear, "Memento mori," which means "Remember your mortality."

If I were in charge of developing a modern version of the phrase, I would

probably pick "Remember your fallibility" or maybe "Remember your irrationality." Whatever the phrase is, recognizing our shortcomings is a crucial first step on the path to making better decisions, creating better societies, and fixing our institutions.

THAT SAID, OUR next task is to try to figure out more effective and practical ways to combat dishonesty. Business schools include ethics classes in their curricula, companies make employees sit through seminars on the code of conduct, and governments have disclosure policies. Any casual observer of the state of dishonesty in the world will quickly realize that such measures don't get the job done. And the research presented here suggests that such Band-Aid approaches are doomed to fail for the very simple reason that they don't take into account the psychology of dishonesty. After all, every time policies or procedures are created to prevent cheating, they target a certain set of behaviors and motivations that need to change. And generally when interventions are set forth, they assume that the SMORC is at play. But as we have seen, this simple model has little to do with the driving forces behind cheating.

If we are really interested in curbing cheating, what interventions should we try? I hope it is clear by now that if we are to stand a chance of curbing dishonesty, we must start with an understanding of *why* people behave dishonestly in the first place. With this as a starting point, we can come up with more effective remedies. For example, based on our knowledge that people in general want to be honest but are also tempted to benefit from dishonesty, we could recommend reminders at the moment of temptation, which, as we've seen, are surprisingly effective. Similarly, understanding how conflicts of interest work and how deeply they influence us makes it clear that we need to avoid and regulate conflicts of interest to a much higher degree. We also need to understand the effects that the environment, as well as mental and physical depletion, plays in dishonesty. And of course, once we understand the social infectiousness of dishonesty, we could take a cue from the Broken Windows Theory to combat the social contagion of cheating.

INTERESTINGLY, WE ALREADY have many social mechanisms in place that seem to be designed specifically for resetting our moral compass and overcoming the "what-the-hell" effect. Such resetting rituals—ranging from the Catholic confession to Yom Kippur, and Ramadan to the weekly Sabbath—all present us with opportunities to collect ourselves, stop the deterioration, and turn a new page. (For the nonreligious, think of New Year's resolutions, birthdays, changes of job, and romantic breakups as "resetting" opportunities.) We have recently started carrying out basic experiments on the effectiveness of these types of resetting approaches (using a nonreligious version of the Catholic confession), and so far it seems that they can rather successfully reverse the what-the-hell effect.

From the social science perspective, religion has evolved in ways that can help society counteract potentially destructive tendencies, including the tendency to be dishonest. Religion and religious rituals remind people of their obligations to be moral

in various ways; recall, for example, the Jewish man with the tzitzit from chapter 2 ("Fun with the Fudge Factor"). Muslims use beads called tasbih or misbaha on which they recount the ninety-nine names of God several times a day. There's also daily prayer and the confessional prayer ("Forgive me, Father, for I have sinned"), the practice of prayaschitta in Hinduism, and countless other religious reminders that work very much as the Ten Commandments did in our experiments.

To the extent that such approaches are useful, we might think about creating related (albeit nonreligious) mechanisms in business and politics. Maybe we should get our public servants and businesspeople to take an oath, use a code of ethics, or even ask for forgiveness from time to time. Perhaps such secular versions of repentance and appeal for forgiveness would help potential cheaters pay attention to their own actions, turn a new page, and by doing so increase their moral adherence.

ONE OF THE more intriguing forms of resetting ceremonies is the purification rituals that certain religious sects practice. One such group is Opus Dei, a secretive Catholic society, in which members flagellate themselves with cattail whips. I don't remember exactly how we started discussing Opus Dei, but, at some point Yoel Inbar (a professor at Tilburg University), David Pizarro and Tom Gilovich (both from Cornell University), and I wondered if self-flagellation and similar behaviors capture a basic human desire for self-cleansing. Can the feeling of having done something wrong be erased by self-punishment? Can self-inflicted pain help us ask for forgiveness and start anew?

Following the physically painful approach of Opus Dei, we decided to conduct an experiment using a more modern and less bloody version of cattail whips—so we picked mildly painful electric shocks as our experimental material. Once participants came to the lab at Cornell University, we asked some of them to write about a past experience that made them feel guilty; we asked other participants to write about a past experience that made them feel sad (a negative emotion but not related to guilt); and we asked a third group to write about an experience that made them feel neither good nor bad. After they reflected on one of these three types of experiences, we asked the participants to take part in "another" experiment involving self-administered electrical shocks.

In this next phase of the experiment, we connected the participant's wrist to a shock-generating machine. Once the connection was secure, we showed the participants how to set the level of the electrical shock and which button to press to give themselves the painful jolt. We set the machine to the lowest possible level of shock and asked participants to press the switch, increase the level of the shock, press the switch, increase the level of the shock, press the switch, and so on until they could no longer tolerate the intensity of the shock.

We really aren't as sadistic as it might sound, but we wanted to see how far participants would push themselves on the pain scale and to what extent their level of self-administered pain would depend on the experimental condition they were in. Most important, we wanted to see whether being reminded of a guilt-related past experience would cause our participants to cleanse themselves by seeking more pain. As it turned out, in the neutral and sad conditions, the degree of self-inflicted pain was similar and rather low, which means that negative emotions by themselves do not

create a desire for self-inflicted pain. However, those in the guilty condition were far more disposed to self-administering higher levels of shocks.

As difficult as it might be to appreciate this experimental support for the practice of Opus Dei, the results suggest that purification through the pain of self-flagellation might tap into a basic way we deal with feelings of guilt. Perhaps recognizing our mistakes, admitting them, and adding some form of physical punishment is a good recipe for asking forgiveness and opening a new page. Now, I am not recommending that we adopt this approach just yet, but I can think of some politicians and businessmen whom I would not mind trying it out on—just to see if it works.

A MORE SECULAR (and more elegant) example of resetting was told to me by a woman I met at a conference a few years ago. The woman's sister lived in South America, and one day the sister realized that her maid had been stealing a little bit of meat from the freezer every few days. The sister didn't mind too much (other than the fact that sometimes she didn't have enough meat to make dinner, which became rather frustrating), but she clearly needed to do something about it. The first part of her solution was to put a lock on the freezer. Then the sister told her maid that she suspected that some of the people who were working at the house from time to time had been taking some meat from the freezer, so she wanted only the two of them to have keys. She also gave her maid a small financial promotion for the added responsibility. With the new role, the new rules, and the added control, the stealing ceased.

I think this approach worked for a number of reasons. I suspect that the maid's habit of stealing developed much like the cheating we've been discussing. Perhaps it began with a single small action ("I'll just take a little bit of meat while I'm cleaning up"), but having stolen once, it became much easier to continue doing so. By locking the freezer and giving the maid an additional responsibility, the sister offered the maid a way to reset her honesty level. I also think that trusting the maid with the key was an important element in changing her view on stealing meat and in establishing the social norm of honesty in that household. On top of that, now that a key was needed to open the freezer, any act of stealing would have to be more deliberate, more intentional, and far more difficult to self-justify. That is not unlike what happened when we forced participants to deliberately move the mouse to the bottom of the computer screen to reveal an answer key (as we saw in chapter 6, "Cheating Ourselves").

The point is that the more we develop and adopt such mechanisms, the more we will be able to curb dishonesty. It is not always going to be simple, but it is possible.

IT'S IMPORTANT TO note that creating an endpoint and the opportunity for a new beginning can take place on a broader social scale. The Truth and Reconciliation Commission in South Africa is an example of this kind of process. The purpose of this courtlike commission was to enable the transition from the apartheid government, which had sharply oppressed the vast majority of South Africans for decades, to a new beginning and to democracy. Similar to other methods of stopping negative behavior, pausing, and starting again, the goal of the commission was reconciliation, not

retribution. I'm sure that no one would claim that the commission erased all memories and remnants of the apartheid era or that anything as deeply scarring as apartheid could ever be forgotten or fully healed. But it remains an important example of how acknowledging bad behavior and asking for forgiveness can be an important step in the right direction.

FINALLY, IT IS worth trying to examine what we have learned about dishonesty from a broader perspective and see what it can teach us about rationality and irrationality more generally. Through the different chapters, we have seen that there are rational forces that we think drive our dishonest behavior—but don't. And there are irrational forces that we think don't drive our dishonest behavior—but do. This inability to recognize which forces are at work and which are irrelevant is something we consistently see in decision making and behavioral economics research.

Viewed from this perspective, dishonesty is a prime example of our irrational tendencies. It's pervasive; we don't instinctively understand how it works its magic on us; and, most important, we don't see it in ourselves.

The good news in all of this is that we are not helpless in the face of our human foibles (dishonesty included). Once we better understand what really causes our less-than-optimal behavior, we can start to discover ways to control our behavior and improve our outcomes. That is the real goal of social science, and I am sure that the journey will only become more important and interesting in the years to come.

Irrationally yours,
Dan Ariely

Thanks

I find writing about academic research to be fulfilling and stimulating, but the pleasure that I get day in and day out comes from working jointly with amazing researchers/friends—coming up with ideas, designing experiments, finding out what works and doesn't work, and figuring out what the results mean. The research described here is largely a product of my collaborators' ingenuity and efforts (see the following biographies of my outstanding colleagues), and I am grateful that we have been able to travel together in the landscape of dishonesty and together learn a bit about this important and fascinating topic.

In addition, I am also thankful to social scientists at large. The world of social science is an exciting place in which new ideas are constantly generated, data collected, and theories revised (some more than others). Every day I learn new things from my fellow researchers and am reminded of how much I don't know (for a partial list of references and additional readings, see the end of this book).

This is my third book, and by now one might expect that I would know what I am doing. But the reality is that I would not be able to do much without the help of many people. My deepest thanks go to Erin Allingham, who helped me write; Bronwyn Fryer, who helped me see more clearly; Claire Wachtel, who conducted the process with grace and humor that is rare in editors; Elizabeth Perrella and Katherine Beitner, who managed to be my human substitutes for both Adderall and Xanax. And the team at Levine Greenberg Literary Agency, who were there to help in every possible way. Aline Grüneisen made many suggestions, some that were very insightful and others that made me smile. I am also grateful to Ania Jakubek, Sophia Cui, and Kacie Kinzer. Very special thanks also go to the person who functions as my external memory, hands, and alter ego: Megan Hogerty.

Finally, where would I be without my lovely wife, Sumi? It takes a very special person to be willing to share a life with me, and my hectic life and workaholism don't make it any easier. Sumi, I will move the boxes to the attic when I get home tonight. Actually, I will probably be late, so I will do it tomorrow. Well, you know what? I will definitely do it this weekend. I promise.

Loving, Dan

List of Collaborators

Aline Grüneisen

Aline joined my research team soon after I moved to Duke, and she has been a major force of energy and excitement ever since. I am not sure if this is part of her plan, but over time I have found myself depending on her to a larger and larger degree. Aline and I have been working together on a broad range of topics, and the unifying theme of all of them is that they are innovative and fun. Aline is currently the lab manager of the Center for Advanced Hindsight at Duke University, and I hope she will continue working with me for many more years.

Ayelet Gneezy

I met Ayelet many years ago at a picnic organized by mutual friends. I had a very positive first impression of her, and my appreciation of her has only increased with time. Ayelet is a wonderful person and a great friend, so it is a bit odd that the topics we decided to collaborate on were mistrust and revenge. Whatever initially drove us to explore these topics ended up being very useful, both academically and personally. Ayelet is currently a professor at the University of California, San Diego.

David Pizarro

David and I first met at an academic summer retreat at Stanford University. We shared a wall between our offices, and that was my first real introduction to rap music. A few weeks into it, I started enjoying the music, and David was kind enough to share his music collection with me (not sure how legal this was). Over the years I have gotten to spend a lot of time with David, and I always learn a lot, get energized, and wish I had more time with him. David is currently a professor at Cornell University.

Eynav Maharabani

I met Eynav in one of my visits to Israel. At the time she was a graduate student who just started working with Racheli Barkan. I was very impressed with her mix of intelligence, politeness, and assertiveness from the get-go, and it is the mix of these abilities that made her such a wonderful collaborator. Eynav is currently working at Abilities Solution, a unique company that focuses on employing people with disabilities for high-tech companies.

Francesca Gino

Francesca is a rare combination of kindness, caring, knowledge, creativity, and style.

She also has endless energy and enthusiasm, and the number of projects she is involved with at any one time is generally what other people do in a lifetime. As an Italian, she is also one of the best people to share a meal and wine with. It was a deeply sad day for me when she decided to move from North Carolina to Boston. Francesca is currently a professor at Harvard University.

Janet Schwartz

I was lucky enough to tempt Janet to spend a few years with me at the Center for Advanced Hindsight. Janet is particularly interested in irrationalities related to health care (of which there are many), and together we have explored eating, dieting, advice, conflicts of interests, second opinions, and different approaches to getting people to behave as if they cared about their long-term health. Janet has a keen sense of observation about the world around her, and she is a fantastic storyteller, making fun of herself and everyone around her. Janet is currently a professor at Tulane University, but in spirit she is still at The Center.

Lisa Shu

Lisa is as bright as she is fun to be with. She has a sort of sixth sense for food, good research ideas, and fashion. These qualities make her not only a perfect collaborator but also a great shopping partner. In addition to studying ethical behavior she is interested in negotiation. And although I have never had the opportunity to personally negotiate with her, I have no doubt that if I did I would lose badly. Lisa is currently a PhD student at Harvard University.

Mary Frances Luce

Mary Frances was a PhD student at Duke a few years ahead of me and came back to Duke as a faculty member, also a few years ahead of me. Naturally this has made her a good source for advice over the years, and she has always been very supportive and helpful. A few years ago she moved to the dean's office, and both for my own sake and for the sake of the school, I hope that I am not going to continue following in her footsteps. Mary Frances is currently a professor at Duke University.

Maurice Schweitzer

Maurice finds almost anything around him interesting, and he approaches new projects with a big smile and great curiosity. For years now he has told me that he is a good squash player, and though I want to personally check how good he really is, I am also a bit worried that I will find out that he is much better than me. Maurice is also always a good source of wisdom on work, family, and life. Maurice is currently a professor at the University of Pennsylvania.

Max Bazerman

Max is insightful about pretty much any topic that comes up in research, politics, and personal life. And he always has something unexpected and interesting to say. After finding out that many of his students solve their own dilemmas and make decisions by asking themselves, "What would Max do?," I tried this approach a few times myself

and can attest to its usefulness. Max is currently a professor at Harvard University.

Michael Norton

Mike is an interesting mix of brilliance, self-deprecation, and a sarcastic sense of humor. He has a unique perspective on life, and he finds almost any topic interesting. Mike is a great person to bounce ideas off of, and his feedback is always a mix of wacky, unexpected, insightful, and constructive. I often think about research projects as journeys, and with Mike I get to go on adventures that would be impossible with anyone else. Mike is currently a professor at Harvard University.

Nicole Mead

I first met Nicole when she was a graduate student at Florida State University. It was late, after a lecture I gave, and we ended up drinking a bit too much. I remember that I was very impressed with the ideas we were exchanging, but at some point I asked Nicole whether she thought that they were really good ideas or if it was the alcohol. Nicole assured me that it was not the alcohol, and I think she was mostly correct. Nicole has had many good ideas then and since, and she is currently a professor at Católica-Lisbon in Portugal.

Nina Mazar

Nina first came to MIT for a few days to get feedback on her research and ended up staying for five years. During this time we had oodles of fun working together and I came to rely on her greatly. Nina is impervious to obstacles, and her willingness to take on large challenges led us to carry out some particularly difficult experiments in rural India. For many years I hoped that she would never decide to leave, but, alas, the time came. She is currently a professor at the University of Toronto. In an alternate reality, Nina is a high-fashion designer in Milan.

On Amir

On joined MIT as a PhD student a year after I joined as a new professor and became "my" first student. In that capacity, he had a tremendous role in shaping what I expect from students and how I see the professor-student relationship. In addition to being exceptionally smart, On has an amazing set of skills, and what he does not know he is able to learn within a day or two. It is always exciting to work and spend time with him. On is currently a professor at the University of California, San Diego.

Racheli Barkan

Racheli (Rachel) and I became friends many years ago when we were both graduate students. Over the years we talked about starting various research projects together, but we really only got started when she came to spend a year at Duke. As it turned out, coffee is an important ingredient for translating ideas into action, and we had lots of fun during her visit and made a lot of progress on a wide range of projects. Racheli is incredibly knowledgeable, smart, and insightful, and I only wish we had more time together. Racheli is currently a professor at Ben-Gurion University of the Negev in Israel.

Roy Baumeister

Roy is a unique mixture of philosopher, musician, poet, and keen observer of human life. His interests span everything, and his perspective often looks puzzling to me at first, but then I realize the wisdom in it and end up thinking about his views for a long while—often adopting them. Roy is an ideal person to travel and explore with. He is currently a professor at Florida State University.

Scott McKenzie

Scott was an enthusiastic Duke undergraduate when he joined the Center for Advanced Hindsight. He was highly social and had a natural knack for getting people to do what he wanted them to do, including participating in our studies. When it was time for him to pick a topic for an independent research project, he picked cheating in golf, and through the process I learned a lot about that noble game. Scott is currently putting in the consulting world.

Shahar Ayal

I first met Shahar socially through common friends and then again when he was studying for his PhD under the supervision of another friend. So when he graduated, our personal and professional paths combined and he came to spend a few years at the Center for Advanced Hindsight as a postdoctoral fellow. Over those years we got to understand each other to a deeper level and think even more alike (mostly for the better). Shahar is a delight to be with and work with, and I am looking forward to many years of joint research. Shahar is currently a professor at the Interdisciplinary Institute in Israel.

Tom Gilovich

When I was a PhD student, I attended one of Tom's presentations, and I was amazed by the quality of his thought and creativity. Tom has a unique ability to ask important questions and find answers in interesting places. For example, he has shown that teams with black uniforms receive more penalties than their opponents; that basketball players don't really get a "hot hand"; and that NBA players miss more free throws when they don't think they deserve the penalty. I have always wanted to be a bit more like Tom. He is currently a professor at Cornell University.

Yoel Inbar

I first met Yoel when he was a student of Tom Gilovich and David Pizarro, and that is how we started working together. Yoel is the epitome of the modern hipster—equal parts cool and geek with a deep knowledge of indie rock bands (you probably haven't heard of them) and UNIX. One of Yoel's interests is disgust, and he is an expert in finding interesting ways to disgust people (fart spray, feces-shaped chocolate, odd foods, etc.). Yoel is currently a professor at Tilburg University in the Netherlands.

Zoë Chance

Zoë is a force of creativity and kindness. Talking to her is a bit like being in an amusement park—you know it is going to be exciting and interesting, but it is hard to

anticipate which direction her comments will take. Together with her love of life and mankind, she is the ideal blend of researcher and friend. Zoë is currently a postdoctoral fellow at Yale University.

Notes

Introduction: Why Is Dishonesty So Interesting?

1. Ira Glass, "See No Evil," *This American Life*, National Public Radio, April 1, 2011.

Chapter 1. Testing the Simple Model of Rational Crime (SMORC)

1. "Las Vegas Cab Drivers Say They're Driven to Cheat," *Las Vegas Sun*, January 31, 2011, www.lasvegassun.com/news/2011/jan/31/driven-cheat/.

Chapter 3. Blinded by Our Own Motivations

1. A. Wazana, "Physicians and the Pharmaceutical Industry: Is a Gift Ever Just a Gift?" *Journal of the American Medical Association* (2000).
2. Duff Wilson, "Harvard Medical School in Ethics Quandary," *The New York Times*, March 2, 2009.

Chapter 5. Why Wearing Fakes Makes Us Cheat More

1. K. J. Winstein, "Inflated Credentials Surface in Executive Suite," *The Wall Street Journal*, November 13, 2008.

Chapter 6. Cheating Ourselves

1. Anne Morse, "Whistling Dixie," *The Weekly Standard* (blog), November 10, 2005.
2. Geoff Baker, "Mark McGwire Admits to Steroids Use: Hall of Fame Voting Becoming a Pain in the Exact Place He Used to Put the Needle," http://seattletimes.nwsource.com/html/marinersblog/2010767251_mark_mcgwire_admits_to_steroid.html.

Chapter 8. Cheating as an Infection: How We Can Catch the Dishonesty Germ

1. Steve Henn, "Oh, Waiter! Charge It to My PAC," *Marketplace*, July 21, 2008, and "PACs Put the Fun in Fundraising," *Marketplace*, July 22, 2008.
2. Steve Henn, "PACs Put the Fun in Fundraising," *Marketplace*, July 22, 2008.

Chapter 9. Collaborative Cheating

1. Dennis J. Devine, Laura D. Clayton, Jennifer L. Philips, Benjamin B. Dunford, and Sarah P. Melner, “Teams in Organizations, Prevalence, Characteristics, and Effectiveness,” *Small Group Research* (1999).

   John Gordon, “Work Teams: How Far Have They Come?” *Training* (1992).

   Gerald E. Ledford, Jr., Edward E. Lawler III, and Susan A. Mohrman, “Reward Innovations in Fortune 1000 Companies,” *Compensation & Benefits Review* (1995).

   Susan A. Mohrman, Susan G. Cohen, and Allan M. Mohrman, Jr., *Designing Team-Based Organizations: New Forms for Knowledge Work* (San Francisco: Jossey-Bass, 1995).

   Greg L. Stewart, Charles C. Manz, and Henry P. Sims, *Team Work and Group Dynamics* (New York: Wiley, 1999).
2. Bernard Nijstad, Wolfgang Stroebe, and Hein F. M. Lodewijkx, “The Illusion of Group Productivity: A Reduction of Failures Explanation,” *European Journal of Social Psychology* (2006).
3. ADA Council on Scientific Affairs, “Direct and Indirect Restorative Materials,” *The Journal of the American Dental Association* (2003).

Chapter 10. A Semioptimistic Ending: People Don’t Cheat Enough!

1. *Montpelier* [Vermont] *Argus & Patriot*, March 6, 1873.

Bibliography and Additional Readings

Introduction: Why Is Dishonesty So Interesting?

Based on

Tim Harford, *The Logic of Life: The Rational Economics of an Irrational World* (New York: Random House, 2008).

Chapter 1. Testing the Simple Model of Rational Crime (SMORC)

Based on

Jerome K. Jerome, *Three Men in a Boat (to Say Nothing of the Dog)* (1889; reprint, New York: Tom Doherty Associates, 2001).

Jeff Kreisler, *Get Rich Cheating: The Crooked Path to Easy Street* (New York: HarperCollins, 2009).

Eynav Maharabani, "Honesty and Helping Behavior: Testing Situations Involving Temptation to Cheat a Blind Person," master's thesis, Ben-Gurion University of the Negev, Israel (2007).

Nina Mazar, On Amir, and Dan Ariely, "The Dishonesty of Honest People: A Theory of Self-concept Maintenance," *Journal of Marketing Research* (2008).

Nina Mazar and Dan Ariely, "Dishonesty in Everyday Life and Its Policy Implications," *Journal of Public Policy and Marketing* (2006).

Chapter 2. Fun with the Fudge Factor

Based on

Nina Mazar, On Amir, and Dan Ariely, "The Dishonesty of Honest People: A Theory of Self-concept Maintenance," *Journal of Marketing Research* (2008).

Lisa Shu, Nina Mazar, Francesca Gino, Max Bazerman, and Dan Ariely, "When to Sign on the Dotted Line? Signing First Makes Ethics Salient and Decreases Dishonest Self-Reports," working paper, Harvard Business School NOM Unit (2011).

Related readings

Jason Dana, Roberto A. Weber, and Jason Xi Kuang, "Exploiting Moral Wiggle Room: Behavior Inconsistent with a Preference for Fair Outcomes," *Economic Theory* (2007).

Christopher K. Hsee, "Elastic Justification: How Tempting but Task-Irrelevant Factors

Influence Decisions," *Organizational Behavior and Human Decision Processes* (1995).

Christopher K. Hsee, "Elastic Justification: How Unjustifiable Factors Influence Judgments," *Organizational Behavior and Human Decision Processes* (1996).

Maurice Schweitzer and Chris Hsee, "Stretching the Truth: Elastic Justification and Motivated Communication of Uncertain Information," *The Journal of Risk and Uncertainty* (2002).

Chapter 2b. Golf

Related readings

Robert L. Goldstone and Calvin Chin, "Dishonesty in Self-report of Copies Made—Moral Relativity and the Copy Machine," *Basic and Applied Social Psychology* (1993).

Robert A. Wicklund, "The Influence of Self-awareness on Human Behavior," *American Scientist* (1979).

Chapter 3. Blinded by Our Own Motivations

Based on

Daylian M. Cain, George Loewenstein, and Don A. Moore, "The Dirt on Coming Clean: The Perverse Effects of Disclosing Conflicts of Interest," *Journal of Legal Studies* (2005).

Ann Harvey, Ulrich Kirk, George H. Denfield, and P. Read Montague, "Monetary Favors and Their Influence on Neural Responses and Revealed Preference," *The Journal of Neuroscience* (2010).

Related readings

James Bader and Daniel Shugars, "Agreement Among Dentists' Recommendations for Restorative Treatment," *Journal of Dental Research* (1993).

Max H. Bazerman and George Loewenstein, "Taking the Bias Out of Bean Counting," *Harvard Business Review* (2001).

Max H. Bazerman, George Loewenstein, and Don A. Moore, "Why Good Accountants Do Bad Audits: The Real Problem Isn't Conscious Corruption. It's Unconscious Bias," *Harvard Business Review* (2002).

Daylian M. Cain, George Loewenstein, and Don A. Moore, "When Sunlight Fails to Disinfect: Understanding the Perverse Effects of Disclosing Conflicts of Interest," *Journal of Consumer Research* (in press).

Carl Elliot, *White Coat, Black Hat: Adventures on the Dark Side of Medicine* (Boston: Beacon Press, 2010).

Chapter 4. Why We Blow It When We're Tired

Based on

Mike Adams, “The Dead Grandmother/Exam Syndrome and the Potential Downfall of American Society,” *The Connecticut Review* (1990).

Shai Danziger, Jonathan Levav, and Liora Avnaim-Pesso, “Extraneous Factors in Judicial Decisions,” *Proceedings of the National Academy of Sciences of the United States of America* (2011).

Nicole L. Mead, Roy F. Baumeister, Francesca Gino, Maurice E. Schweitzer, and Dan Ariely, “Too Tired to Tell the Truth: Self-Control Resource Depletion and Dishonesty,” *Journal of Experimental Social Psychology* (2009).

Emre Ozdenoren, Stephen W. Salant, and Dan Silverman, “Willpower and the Optimal Control of Visceral Urges,” *Journal of the European Economic Association* (2011).

Baba Shiv and Alexander Fedorikhin, “Heart and Mind in Conflict: The Interplay of Affect and Cognition in Consumer Decision Making,” *The Journal of Consumer Research* (1999).

Related readings

Roy F. Baumeister and John Tierney, *Willpower: Rediscovering the Greatest Human Strength* (New York: The Penguin Press, 2011).

Roy F. Baumeister, Kathleen D. Vohs, and Dianne M. Tice, “The Strength Model of Self-control,” *Current Directions in Psychological Science* (2007).

Francesca Gino, Maurice E. Schweitzer, Nicole L. Mead, and Dan Ariely, “Unable to Resist Temptation: How Self-Control Depletion Promotes Unethical Behavior,” *Organizational Behavior and Human Decision Processes* (2011).

C. Peter Herman and Janet Polivy, “A Boundary Model for the Regulation of Eating,” *Research Publications—Association for Research in Nervous and Mental Disease* (1984).

Walter Mischel and Ozlem Ayduk, “Willpower in a Cognitive-Affective Processing System: The Dynamics of Delay of Gratification,” in *Handbook of Self-regulation: Research, Theory, and Applications*, edited by Kathleen D. Vohs and Roy F. Baumeister (New York: Guilford, 2011).

Janet Polivy and C. Peter Herman, “Dieting and Binging, A Causal Analysis,” *American Psychologist* (1985).

Chapter 5. Why Wearing Fakes Makes Us Cheat More

Based on

Francesca Gino, Michael I. Norton, and Dan Ariely, “The Counterfeit Self: The Deceptive Costs of Faking It,” *Psychological Science* (2010).

Related readings

Dan Ariely and Michael L. Norton, “How Actions Create—Not Just Reveal—Preferences,” *Trends in Cognitive Sciences* (2008).

Roy F. Baumeister, Kathleen D. Vohs, and Dianne M. Tice, “The Strength Model of Self-control,” *Current Directions in Psychological Science* (2007).

C. Peter Herman and Deborah Mack, “Restrained and Unrestrained Eating,” *Journal of Personality* (1975).

Chapter 6. Cheating Ourselves

Based on

Zoë Chance, Michael I. Norton, Francesca Gino, and Dan Ariely, “A Temporal View of the Costs and Benefits of Self-Deception,” *Proceedings of the National Academy of Sciences* (2011).

Related readings

Ziva Kunda, “The Case for Motivated Reasoning,” *Psychological Bulletin* (1990).

Danica Mijovic´-Prelec and Dražen Prelec, “Self-deception as Self-Signalling: A Model and Experimental Evidence,” *Philosophical Transactions of the Royal Society* (2010).

Robert Trivers, “The Elements of a Scientific Theory of Self-Deception,” *Annals of the New York Academy of Sciences* (2000).

Chapter 7. Creativity and Dishonesty: We Are All Storytellers

Based on

Edward J. Balleisen, “Suckers, Swindlers, and an Ambivalent State: A History of Business Fraud in America,” manuscript.

Shane Frederick, “Cognitive Reflection and Decision Making,” *Journal of Economic Perspectives* (2005).

Michael S. Gazzaniga, “Consciousness and the Cerebral Hemispheres,” in *The Cognitive Neurosciences*, edited by Michael S. Gazzaniga (Cambridge, Mass.: MIT Press, 1995).

Francesca Gino and Dan Ariely, “The Dark Side of Creativity: Original Thinkers Can Be More Dishonest,” *Journal of Personality and Social Psychology* (2011).

Ayelet Gneezy and Dan Ariely, “Don’t Get Mad, Get Even: On Consumers’ Revenge,” working paper, Duke University (2010).

Richard Nisbett and Timothy DeCamp Wilson, “Telling More Than We Can Know: Verbal Reports on Mental Processes,” *Psychological Review* (1977).

Yaling Yang, Adrian Raine, Todd Lencz, Susan Bihrle, Lori Lacasse, and Patrick Colletti, “Prefrontal White Matter in Pathological Liars,” *The British Journal of Psychiatry* (2005).

Related readings

Jesse Preston and Daniel M. Wegner, “The Eureka Error: Inadvertent Plagiarism by Misattributions of Effort,” *Journal of Personality and Social Psychology* (2007).

Chapter 8. Cheating as an Infection: How We Catch the Dishonesty Germ

Based on

Nicholas A. Christakis and James H. Fowler, *Connected: The Surprising Power of Our Social Networks and How They Shape Our Lives* (New York: Little, Brown, 2009).

Robert B. Cialdini, *Influence: The Psychology of Persuasion* (New York: William Morrow, 1993).

Francesca Gino, Shahar Ayal, and Dan Ariely, "Contagion and Differentiation in Unethical Behavior: The Effect of One Bad Apple on the Barrel," *Psychological Science* (2009).

George L. Kelling and James Q. Wilson, "Broken Windows: The Police and Neighborhood Safety," *The Atlantic* (March 1982).

Nina Mazar, Kristina Shampanier, and Dan Ariely, "Probabilistic Price Promotions—When Retailing and Las Vegas Meet," working paper, Rotman School of Management, University of Toronto (2011).

Related readings

Ido Erev, Paul Ingram, Ornit Raz, and Dror Shany, "Continuous Punishment and the Potential of Gentle Rule Enforcement," *Behavioural Processes* (2010).

Chapter 9. Collaborative Cheating: Why Two Heads Aren't Necessarily Better than One

Based on

Melissa Bateson, Daniel Nettle, and Gilbert Roberts, "Cues of Being Watched Enhance Cooperation in a Real-World Setting," *Biology Letters* (2006).

Francesca Gino, Shahar Ayal, and Dan Ariely, "Out of Sight, Ethically Fine? The Effects of Collaborative Work on Individuals' Dishonesty," working paper (2009).

Janet Schwartz, Mary Frances Luce, and Dan Ariely, "Are Consumers Too Trusting? The Effects of Relationships with Expert Advisers," *Journal of Marketing Research* (2011).

Related readings

Francesca Gino and Lamar Pierce, "Dishonesty in the Name of Equity," *Psychological Science* (2009).

Uri Gneezy, "Deception: The Role of Consequences," *American Economic Review* (2005).

Nina Mazar and Pankaj Aggarwal, "Greasing the Palm: Can Collectivism Promote Bribery?" *Psychological Science* (2011).

Scott S. Wiltermuth, "Cheating More When the Spoils Are Split," *Organizational Behavior and Human Decision Processes* (2011).

Chapter 10. A Semioptimistic Ending: People Don't Cheat Enough!

Based on

Rachel Barkan and Dan Ariely, "Worse and Worst: Daily Dishonesty of Business-men and Politicians," working paper, Ben-Gurion University of the Negev, Israel (2008).

Yoel Inbar, David Pizarro, Thomas Gilovich, and Dan Ariely, "Moral Masochism: Guilt Causes Physical Self-punishment," working paper (2009).

Azim Shariff and Ara Norenzayan, "Mean Gods Make Good People: Different Views of God Predict Cheating Behavior," *International Journal for the Psychology of Religion* (2011).

Related readings

Keri L. Kettle and Gerald Häubl, "The Signature Effect: How Signing One's Name Influences Consumption-Related Behavior by Priming Self-Identity," *Journal of Consumer Research* (2011).

Deepak Malhotra, "(When) Are Religious People Nicer? Religious Salience and the 'Sunday Effect' on Pro-Social Behavior," *Judgment and Decision Making* (2010).

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About the Author

Dan Ariely is the James B. Duke Professor of Psychology and Behavioral Economics at Duke University, with appointments at the Fuqua School of Business, the Center for Cognitive Neuroscience, the Department of Economics, and the School of Medicine. Dan earned one PhD in cognitive psychology and another PhD in business administration. He is the founder and director of the Center for Advanced Hindsight. His work has been featured in many outlets, including *The New York Times*, *The Wall Street Journal*, *The Washington Post*, *The Boston Globe*, and others. He lives in Durham, North Carolina, with his wife, Sumi, and their two creative children, Amit and Neta.

www.danariely.com

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*As a convention in this book, every time I mention that conditions are different from each other, it is always a statistically significant difference. I refer the interested reader to the end of this book for a list of the original academic papers and additional readings.

*Now that you know this fact, and assuming that you are not married, take this into account when you search for a soul mate. Look for someone whose sibling is married to a productivity-challenged individual.

*Of course, physicians have other problems as well, including insurance forms, bureaucracy, and threats of lawsuits for malpractice.

*The price the highest bidder paid for an item was based not on his own bid, but on that of the second highest bidder. This is called a second price auction. William Vickrey received the Nobel prize in economics for demonstrating that this type of auction creates the conditions where it is in people's best interest to bid the maximum amount they are willing to pay for each item (this is also the general logic behind the auction system on eBay).

*When I've tried this kind of experiment on executives and managers (at the MIT Executive Education Program), I've had similar success making their social security numbers influence the prices they were willing to pay for chocolates, books, and other products.

*The result was not due to wealth, taxes, or other financial reasons.

*To ensure that the bids we got were indeed the lowest prices for which the participants would listen to the annoying sounds, we used the “Becker-DeGroot-Marschak procedure.” This is an auction-like procedure, in which each of the participants bids against a price randomly drawn by a computer.

*We will return to this astute observation in the chapter on social and market norms (Chapter 4).

*I am not claiming that spending money on a wonderful cup of coffee every day, or even a few times a day, is necessarily a bad decision—I am saying only that we should question our decisions.

*We posted the prices so that they were visible only when people got close to the table. We did this because we wanted to make sure that we did not attract different types of people in the different conditions—avoiding what is called self-selection.

*For a more detailed account of how a rational consumer should make decisions in these cases, see the appendix to this chapter.

*Similar to the other experiments, when we increased the cost of both certificates by $1, making the $10 certificate cost $1 and the $20 certificate cost $8, the majority jumped for the $20 certificate.

*When it comes to credit cards, the appeal of FREE! is further enhanced because most of us are overoptimistic about our financial future, and overconfident about our ability to always pay our bills on time.

*This general procedure is called priming, and the unscrambling task is used to get participants to think about a particular topic—without direct instructions to do so.

*For a complete lists of the questions we asked, see the appendix to this chapter.

*These results apply most directly to sexual arousal and its influence on who we are; but we can also assume that other emotional states (anger, hunger, excitement, jealousy, and so on) work in similar ways, making us strangers to ourselves.

**I teach about 200 graduate students each year, and in early 2009 I asked for a show of hands to the question of how many students had ever used e-mail or text messaging while driving. All but three raised their hands (and one of the three who did not was visually impaired!).

**I did experience such a negative association with eggs. Soon after I was injured, the doctors fed me thirty raw eggs daily through a feeding tube. To this day, even the smell of eggs turns me off.

**The architecture department at MIT is in fact very good.

*I’m often surprised by how much people confide in me. I think it’s partly due to my scars, and to the obvious fact that I’ve been through substantial trauma. On the other hand, what I would like to believe is that people simply recognize my unique insight into the human psyche, and thus seek my advice. Either way, I learn a lot from the stories people share with me.

*Matrimony is a social device that would seem to force individuals to shut down their alternative options, but, as we know, it too doesn't always work.

*The French logician and philosopher Jean Buridan's commentaries on Aristotle's theory of action were the impetus of this story, known as "Buridan's ass."

*We were also hoping to measure the amount of vinegar students added to the beer. But everyone who added vinegar added the exact amount specified in the recipe.

*There is a nice T-shirt on sale at the MIT bookstore that reads “Harvard: Because not everyone can get into MIT.”

**In fact, goose liver pâté is basically equal parts goose liver and butter, with some wine and spices.

*The music included Bach's "Chaconne," Franz Schubert's "Ave Maria," Manuel Ponce's "Estrellita," a piece by Jules Massenet, a Bach gavotte, and a reprise of "Chaconne."

*We do understand quite precisely how a placebo works in the domain of pain, and this is why we selected the painkiller as our object of investigation. But other placebo effects are not as well understood.

**I suspect that Airborne incorporates many elements to maximize the placebo effect (bubbles, foaming, medicinal color, exaggerated claims, and so on) and, as a consequence, had a real beneficial impact on my immune system and my ability to fight off illnesses. Placebos are all about self-fulfilling prophecies, and Airborne is one of the best.

*As claimed by the Harvard Business School.

*We often conduct our experiments at Harvard, not because we think its students are different from MIT's students, but because it has wonderful facilities and the faculty members are very generous in letting us use them.

*The distribution of the number of correctly solved questions remained the same across all four conditions, but with a mean shift when the participants could cheat.

*Do you know the Ten Commandments? If you'd like to test yourself, write them down and compare your list with the list at the end of this chapter. To be sure you have them right, don't just say them to yourself; write them down.

*Can the Ten Commandments raise one's math scores? We used the same two memory tasks with the control condition to test that premise. The performance in the control condition was the same regardless of the type of memory task. So the Commandments do not raise math scores.

*Theoretically, it is possible that some people solved all the problems. But since no one in the control conditions solved more than 10 problems, the likelihood that four of our participants truly solved 20 is very, very low. For this reason we assumed that they cheated.

*Independent of your opinion about the effect (or lack thereof) of carbon emissions, for the sake of this illustration, let's assume that we want to limit it.

*The Boston Common, today a public park in downtown Boston, was created in 1634 as a designated common pasture for grazing animals.

*The two political parties engendered the same level of mistrust, even in the eyes of their own voters. This means that Democrats and Republicans did not believe that their own party was more trustworthy than the opposing party—a sad picture indeed.

*The tragedy of the commons refers to a situation in which individuals, acting to promote their own self-interest, ultimately deplete a shared limited resource—even when it hurts everyone, including themselves, in the long term.

*As the Commandments vary by religion, correct answers could be from any version. For your interest, here are three versions.

*Readers of *Predictably Irrational* with a particularly good memory may recall part of this story.

*If you think that you never sacrifice long-term benefits for short-term satisfaction, just ask your significant other or your friends. No doubt they can point out an example or two for you.

*Sometimes experiments reveal surprising, counterintuitive findings; at other times, they confirm intuitions most of us already have. But intuition is not the same as evidence; and only by conducting careful experimentation can we discover whether our hunches about a certain human foible are right or wrong.

*References to the academic papers mentioned in each chapter, as well as suggested additional readings, are at the end of the book.

*There have, of course, been many attempts to explain why it is rational to pay CEOs very high salaries, including one that I find particularly interesting but unlikely. According to this theory, executives get very high pay not because anyone thinks they earned it or deserve it but because paying them so much can motivate *other* people to work hard in the hope that they too will one day be overpaid like the CEO. The funny thing about this theory is that if you follow it to its logical conclusion, you would not only pay CEOs ridiculously high salaries, but you would also force them to spend more time with their friends and families and send them on expensive vacations in order to complete the picture of a perfect life—because this would be the best way to motivate other people to try to become CEOs.

*Each participant played in a different, random order. The order of the games did not make a difference in terms of performance.

*Loss aversion is a powerful idea that was introduced by Danny Kahneman and Amos Tversky, and it has been applied to many domains. For this line of work, Danny received the 2002 Nobel Prize in Economics (sadly, Amos had already passed away in 1996).

*I suspect that economists who fully believe in the rationality of businesses have never worked a day outside academia.

*In defense of those who place too much confidence in their intuition, the payment-to-performance link is not easy to figure out or study.

*The answers are HOUSE, AUDIT, and ANAGRAM. For fun, try this one (with the added constraint that switching the letters around should maintain the general meaning): OLD WEST ACTION: _____.

*When academics finish a paper, we submit it to a journal, at which point the editor sends it to a few anonymous reviewers to pass critical judgment and tell the authors why the paper is useless and should never be published. It is one of the tortures we academics inflict on ourselves and, in my opinion, it is one of the main barriers to finding meaning in an academic career.

*Nowadays they take older, more mature individuals as guards for these trips.

*As a parent, I am sure there is some clue here about how to get kids to eat, but I am not sure what it is yet.

*•I do the same thing as Jean Paul when I experiment with cooking. The food I make, objectively speaking, is not as good as the food I could get in restaurants, but I do find it more meaningful and pleasurable.

*The neocortex is the most recent part of the brain to evolve and one of the most substantial differences between the human brain and those of all other mammals.

*Although I do remember one time when she asked me whether she could listen to me practice a talk about subjective and objective probabilities and I was quite disheartened when, ten minutes into it, she fell asleep.

*I suspect that the “duck test” (if it looks like a duck, swims like a duck, and quacks like a duck, then it probably is a duck) is the best way to define meaning at work. Moreover, the important aspect of our experiments is the difference in meaning between the conditions and not the absolute level of meaning.

*In general, we are often overly focused on endings when we evaluate overall experiences. From this perspective, a cake at the end of a meal is of particular importance.

*• The same principle would also apply to men. I am using female terms because at the time, women were more likely to be in charge of cooking.

*As discussed in chapter 2, “The Meaning of Labor,” even animals prefer to eat food that they have worked for in one way or another.

*The Becker-DeGroot-Marschak procedure is similar to a second-price auction played against a random distribution.

*For some of the dangers of customization and the risks of overfalling in love with our own creations, see my story of overtailoring my house in *Predictably Irrational*.

*The differences between the two types of auctions are somewhat complex—which is why William Vickrey was awarded the Nobel Prize in Economics in 1996 for describing some of their nuances.

*This procedure is similar to the auction method used by eBay, as well as the Becker-DeGroot-Marschak method we used earlier.

*The problems were given to them in a randomly determined order.

*There are a few exceptions to the rule; some companies seem to be very good in adopting external ideas and moving forward with them in a big way. For example, Apple took many ideas from Xerox PARC, and Microsoft borrowed ideas from Apple.

*In fact, revenge is a good metaphor for behavioral economics more generally. Though the instinct may not be rational, it is not senseless, and sometimes it is even useful.

*There are many different versions of this game, with different rules and different amounts of money, but the basic principle is the same.

*The bailout did help many banks, which quickly returned to profitability and proceeded to pass out large bonuses to their top management. It didn't do as much for the economy.

*The nickname for a law that provides a remedy for purchasers of new cars that fail to meet certain standards of quality and performance (lemons).

*This is another example of strong revenge, since the Neistat brothers broke some laws regarding the destruction of property when they defaced the iPod posters.

*Pain is an experience that is influenced by both physical and hedonic components and as such it is a useful bridge between physical adaptation (e.g., a frog getting used to increasingly hot water) and hedonic adaptation (e.g., a person getting desensitized to the smell of his or her new car).

*For more on this, see Daniel Gilbert's book *Stumbling on Happiness*.

*For an exception, see San Francisco.

*Speaking of interruptions, think about television. We spend all kinds of money on gadgets and services such as TiVo to keep commercials out of our lives. But could we possibly enjoy the latest installment of *Lost* or *House* even more with the periodic interruptions of commercials? Leif, Tom, and Jeff Galak had the gall to test this. They discovered that when people are watching uninterrupted TV programs, their pleasure diminishes as the show goes on. But when the show is interrupted by commercial breaks, the pleasure level increases. I have to admit that, in spite of these findings, I will continue to use my TiVo.

*The Jobst was a head-to-toe plastic cover designed to put pressure on the recovering tissue. It covered me completely, leaving holes only for my eyes, ears, and mouth. It made me look like a cross between a flesh-colored Spider-Man and a bank robber.

*I often had a strong feeling that when others observed me, they saw my injury but also inferred that my appearance was correlated with diminished intelligence. As a consequence, it was very important to me to demonstrate that my mind still functioned in the same way it had before my accident.

*In reality, the correlation between wine price and quality is close to zero, but that's an issue for another day.

*Other stories depicting humans imprisoned within their bodies include Ovid's *Metamorphoses*, "The Beauty and the Beast," *Johnny Got His Gun*, and *The Diving Bell and the Butterfly*, to name a few.

*When I use the term “aesthetically challenged,” it is because I don’t know what term to use. All I mean is that some people are more physically attractive and others are less so.

*If you've never been to www.hotornot.com, I highly recommend that you check it out, if only for the glimpse it provides into human psychology.

*Given the nature of HOT or NOT, our data most likely overemphasized beauty relative to other attributes. Nevertheless, the principles we examined should generalize to other types of adaptation as well.

*We did not include people searching for same-sex partners in this first step, but that could be an interesting extension of the research.

*Michelle will likely shave off a few years and pounds, of course. People often tend to fudge their numbers in online dating—virtual men are taller and richer, while virtual women are thinner and younger than their real-life counterparts.

*If you feel like trying this for yourself, ask a few of your acquaintances to describe themselves using the methods of online dating (without giving information that will identify who they are). Then see if you can tell, from their profiles, whom you actually like and whom you can't stand.

*This thought experiment is based on one of Peter Singer's examples in *Famine, Affluence, and Morality* (1972). His recent book *The Life You Can Save* further develops this argument.

*Though I describe these three factors (closeness, vividness, and the drop-in-the-bucket effect) as separate, in real life they often work in combination and it is not always clear which one is the main driving force.

*This is not to say that there are not many wonderful people who give money and volunteer their time to help strangers on the opposite side of the globe, only that the tendency to do so depends on closeness, vividness, and the drop-in-the-bucket effect.

*Like many political bodies, the United Nations is anemic and spineless. It hardly helps that the five permanent members of the Security Council have veto power over virtually every important UN decision. But, in principle, the United Nations could potentially be a force that solves important problems even when the public's emotions are not ignited.

*For other ways in which self-herding influences us, see chapter 2 in *Predictably Irrational*.

*I have not done the needed research to validate my canoeing test, so I can't say for sure, but I suspect that it would have an excellent predictive accuracy (and yes, I am perfectly aware of the overconfidence bias).

*In experiments I conducted many years later with athletes, I found that counting helps increase endurance and that counting backward is even more helpful.

*This is not to say that medical professionals have not discovered wonderful treatments over the years; they have. The point is that without sufficient experimentation, they keep on using ineffective or dangerous treatments for too long.

*For two great books on medical delusions, see Nortin Hadler's *Stabbed in the Back* and *Worried Sick*.

*As for the question of whether men or women have a higher pain threshold and whether this is somehow connected to childbirth—this is still an open question.

*For more on the importance of social life for health, see Ellen Langer's book *Counterclockwise*.

* The flood of corporate scandals that continued from that point on very clearly answered this question.

* For the full references to all the materials used in each chapter, and for related readings, see the Bibliography and Additional Readings at the back of the book.

* Beyond exploring the topic of dishonesty, this book is fundamentally about rationality and irrationality. And although dishonesty is fascinating and important in human endeavors its own right, it is also important to keep in mind that it is but a single component of our interesting and intricate human nature.

* Readers of *Predictably Irrational* might recognize some of the material presented in this chapter and in chapter 2, “Fun with the Fudge Factor.”

* *X* stands for the number of questions that the participants claimed to have solved correctly.

* One important question about the usage of moral reminders is whether over time people will get used to signing such honor codes, causing such reminders to lose their effectiveness. That is why I think that the right approach is to ask people to write their own version of the honor code—that way it will be difficult to sign without thinking about morality, and more ethical behavior should follow.

* As it turned out, I was audited by the IRS a few years later, and it was a long, painful but very interesting experience. I don't think it was related to this meeting.

* I suspect that for people who actively dislike the government or insurance companies, the effect would still hold, though it might be mitigated to some degree—something worth testing in the future.

* Think about all the cases in which people ask for advice about how to behave in embarrassing situations—not for themselves but for a “friend.”

* When I was a teenager, a magnesium flare exploded next to me. I suffered massive third-degree burns and underwent many operations and treatments over the subsequent years. For more details, see my previous books.

* Perhaps the most telling evidence for the pharma industry's influence is the fact that my insider for this interview insisted that I keep his name confidential to avoid being blacklisted by pharma.

* This was the first time that I was paid a lot by the hour, and I was intrigued by how I started to view many decisions in terms of “work hours.” I figured that for one hour of work I could buy a really fancy dinner and that for a few more I could buy a new bicycle. I suspect that this is an interesting way to think about what we should and should not purchase, and one day I might look into this.

* The market for fake goods, of course, ranges far beyond Chinatown and New York. After gathering momentum for more than forty years, the phenomenon is now a formidable affair. Counterfeiting is illegal almost everywhere on our planet, though the severity of the punishment varies from country to country, as does people's view of the morality of buying counterfeits. (See Frederick Balfour, "Fakes!" *BusinessWeek*, February 7, 2005.)

* The rumor about this shipment quickly traveled around Duke, and I became popular among the fashion-minded crowd.

* You might wonder if receiving counterfeits as gifts would have the same effect as choosing a counterfeit product for ourselves. We wondered the same thing and tested this question in another experiment. It turned out that it doesn't matter whether we acquire a counterfeit product by our own choice or not; once we have a fake product, we are more likely to cheat.

* You might wonder if people are aware of the downstream consequences of counterfeits. We tested this too and found that they are unaware of these effects.

* We used this type of SAT-like question instead of our standard matrices because we expected that such questions would lead more naturally to the feeling of “I knew it all along” and to self-deception.

* The story was written up by Kubrick's assistant, Anthony Frewin, in *Stop Smiling* magazine, and it was the basis of the film *Colour Me Kubrick*, starring John Malkovich as Conway.

* I have nothing against the Ford Taurus, which I am sure is a fine automobile; it just wasn't as exciting a car as I'd imagined myself driving.

* I suspect that there is a connection between dishonesty and traveling in general. Perhaps it's because when traveling the rules are less clear, or maybe it has to do with being away from one's usual setting.

* The smart thing would have been to lead the students through the oath at the start of every lecture, and maybe this is what I will do next time.

* I suspect that companies that adapt the ideology of maximizing shareholder value above all else can use this motto to justify a broad range of misbehaviors, from financial to legal to environmental cheating. The fact that the compensation of the executives is linked to the stock price probably only increases their commitment to “shareholder value.”

* Another fuzzy rule is the quaint-sounding “principle of prudence,” according to which accountants should not make things appear rosier than they actually are.

* Based on these results, we could speculate that people who work for ideological organizations such as political groups and not-for-profits might actually feel more comfortable bending moral rules—because they are doing it for a good cause and to help others.

* Are dentists doing this on purpose, and do the patients know that they are being punished for their loyalty? Most likely it is not intentional, but whether conscious or not, the problem remains.